

Office of the Deputy Under Secretary of Defense
(Installations and Environment)



Department of Defense
Annual Energy Management Report
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Table of Contents

1.	Introduction	5
2.	Facility Energy Program Management.....	9
3.	DoD's Progress in Reducing Energy Demand.....	15
	Facility Energy Demand Overview	15
	Potable Water Consumption and Intensity	24
	Industrial, Landscaping, and Agricultural (ILA) Water Consumption	27
	Non-Tactical Fleet Vehicles Petroleum Consumption	28
4.	Increasing DoD's Supply of Renewable Energy.....	31
	DoD Renewable Energy Performance	31
	Potential for Renewable Energy on Military Installations	41
	Net Zero Energy Installation	50
5.	Enhancing Energy Security	53
	Addressing Concerns	54
	Overview of Installation Energy Test Bed Efforts	55
	Next Generation Microgrids	57
	Service Initiatives	61
6.	Data Management and Metering	65
	Progress Toward Energy Metering Goals	65
	Initiatives to Improve Facility Energy Monitoring	67
7.	Funding Energy Projects	71
	Energy Projects Funded by Appropriations	71
	Energy Projects Financed Through Non-Governmental Third-Party Mechanisms.....	75
8.	Federal Building Energy Efficiency Standards.....	79
	DoD's Progress Toward Meeting ASHRAE 90.1 Standards	80
	DoD's Progress in Meeting Green Building Standards.....	80
	EISA 2007 Section 433 Required Reduction in Fossil Fuel Use	82



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Appendices

Appendix A – List of Energy Acronyms.....	A-1
Appendix B – Energy Goals and Reporting Requirements.....	B-1
Appendix C – Energy Performance Master Plan.....	C-1
Appendix D – DoD Energy Performance Summary.....	D-1
Appendix E – FY 2012 Energy Intensity by Installation.....	E-1
Appendix F – House Armed Service Committee Letter on DoD’s Renewable Energy Goal.....	F-1
Appendix G – FY 2011 Renewable Energy Potential.....	G-1
Appendix H – Lists of Energy Projects and Funded Amounts.....	H-1
Appendix I – Military Construction Projects Incorporating ASHRAE.....	I-1
Appendix J – Military Construction Renewable Energy Initiatives.....	J-1
Appendix K – Utility Privatization Report.....	K-1
Appendix L – Contact Information.....	L-1
Appendix M – References.....	M-1



1. Introduction

On military installations; in aircraft, ships, or combat vehicles; in wartime or peacetime—energy is a mission-essential resource for any kind of military operation. Consequently, the Department’s supply, use, and management of energy can significantly impact its missions, capabilities, and costs. Energy affects Department of Defense (DoD) missions by shaping the operating environments of United States Forces at home and abroad; it affects military capabilities by enabling strategic attributes such as range, endurance, persistence, command and control, and mission assurance; and it represents a substantial and volatile expense for DoD that competes with its potential investments in personnel and equipment. Accordingly, having a sound energy management strategy both strengthens the Department’s military capability and controls its costs; whereas lacking a coordinated energy strategy potentially exposes the Department to operational inefficiencies, security risks, and wasteful spending.

In consideration of this, in 2012 the Department conducted a comprehensive assessment of energy initiatives across DoD. In particular, the assessment identified a significant need for an energy policy to encompass all DoD Components and to guide the Department’s full range of energy activities, including operational energy; facilities energy; and energy-related elements of mission assurance, which are largely reliant on energy security.

As defined in section 2924 of title 10, United States Code, energy security means having assured access to reliable supplies of energy and the ability to protect and deliver sufficient energy to meet mission-essential requirements. Assurance of DoD’s energy security will require the codification and implementation of three key objectives across the Department. The first of these is to ensure the energy security of DoD capabilities, equipment, and infrastructure that directly support or enable defense missions or assets. This includes the development of more energy-efficient weapons systems, platforms, equipment, and facilities; investment in cost-effective energy sources, including alternative energy; and the Department-wide integration of energy-informed analyses into decision-making and business processes.

The second critical requirement for DoD energy security is to promote the energy security of non-DoD capabilities, equipment, and infrastructure that indirectly support or contribute to defense missions and assets. This can be achieved through collaboration with non-DoD entities (such as other federal departments and agencies, state and local governments, and private sector partners) to monitor energy-related dependencies and promote the restoration and resilience of non-DoD energy infrastructure.

As its third and final objective, the Department must advance the energy security of future defense forces and missions through technological innovation. Achieving this relies on 1) ensuring that DoD Science, Technology, Engineering, and Environmental support activities are able to effectively identify and develop new energy technologies to support defense capabilities, assets, or missions; 2) leveraging appropriate resources and expertise across the Government and in the private sector to meet DoD



Office of the Deputy Under Secretary of Defense (Installations and Environment)

energy needs; and 3) transitioning DoD's energy innovations to other federal departments and agencies and to the private sector, where suitable.

One important opportunity for the Department to improve its energy security exists in the form of fixed installations. DoD's fixed installations are critical components of our ability to fight and win wars, and they account for approximately 25 percent of DoD's total energy use. As the Department manages over 500 installations worldwide, comprising nearly 300,000 buildings, installations are also a clear target for DoD to promote energy efficiency and reduce energy costs. The keys to transforming installation energy are investment in energy-efficient facilities and cost-effective energy sources for those facilities, including alternative energy sources; as well as the promotion of non-materiel and behavior-based solutions. Through such initiatives the Department can help ensure the security, resiliency, and reliability of a large percentage of the energy it manages, and treat facility energy as a force multiplier in the support of military readiness.

At its core, the Department's facility energy strategy integrates four principles (Figure 1-1):

- Reduce energy demand through energy-efficient facilities and behavior-based conservation;
- Expand the supply of renewable energy;
- Enhance the energy security of DoD installations; and
- Leverage investment toward the development of advanced energy technologies.

Figure 1-1: Facility Energy Strategy



Augmenting these principles, comprehensive measurement of facility energy helps the Department maintain an aggressive pace toward its larger energy objectives. To that end, this Annual Energy Management Report (AEMR) details the Department's Fiscal Year (FY) 2012 performance toward its goals of enhanced energy security, increased energy efficiency, and expanded use of renewable energy on fixed installations. In this AEMR for FY 2012, the DoD reports on its facility energy performance.¹

¹ DoD distinguishes facility energy from operational energy. Facility energy includes energy needed to power fixed installations and non-tactical vehicles. Operational energy is the energy required for training, moving, and sustaining military forces and weapons platforms for military operations, including energy used by tactical power systems, generators, and weapons platforms, 10 U.S.C. § 2924(5). This report includes the facility energy activities of the Army, Navy, Air Force, and Marine Corps, and the following Defense Agencies: Defense Contract Management Agency (DCMA); Defense Commissary Agency (DeCA); Defense Finance and Accounting Service (DFAS); Defense Intelligence Agency (DIA); Defense Logistics Agency (DLA); Missile Defense Agency (MDA); National Geospatial-Intelligence Agency (NGA); National Reconnaissance Office (NRO); National Security Agency (NSA); and Washington Headquarters Services (WHS).



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Table 1-1 summarizes the Department's progress toward its FY 2012 energy goals; while Appendix D presents the Department's energy-related performance metrics in greater detail. As shown, while DoD fell short of its FY 2012 goals for energy-intensity reduction and renewable energy, it exceeded its goals for potable water intensity and petroleum-consumption reduction.

Table 1-1: FY 2012 DoD Progress Toward Facility Energy and Water Goals

Goals & Objectives	Metric	Entity	FY 2012 Performance	FY 2012 Target
Reduce Facility Energy Intensity relative to FY 2003 baseline (EISA 2007)	British thermal unit (Btu) of energy consumed per gross square foot of facility space	DoD	-17.7%	-21%
		Army	-15.7%	
		Navy	-19.1%	
		Marine Corps	-18.9%	
		Air Force	-21.2%	
Consume more electric energy from renewable sources (EPA 2005)	Total renewable electricity consumption as a percentage of total facility electricity consumption	DoD	4.0%	5.0%
		Army	0.5%	
		Navy	1.7%	
		Marine Corps	9.9%	
		Air Force	5.5%	
Produce or procure more energy from renewable sources (2911e)	Total renewable energy (electric and non-electric) produced or consumed as a percentage of total facility electricity consumption	DoD	9.6%	25% by 2025
		Army	5.9%	
		Navy	20.6%	
		Marine Corps	5.4%	
		Air Force	6.9%	
Reduce Potable Water Intensity relative to FY 2007 baseline (EO 13423)	Gallons of water used per square foot of facility space	DoD	-18.6%	-10%
		Army	-25.4%	
		Navy	-6.4%	
		Marine Corps	-24.4%	
		Air Force	-18.1%	
Reduce Petroleum Consumption in non-tactical vehicles relative to FY 2005 baseline (EISA 2007, EO 13514)	Gallons of gasoline equivalent of petroleum fuel consumed	DoD	-19.5%	-14%
		Army	-28.5%	
		Navy	-20.0%	
		Marine Corps	-23.4%	
		Air Force	1.7%	



Office of the Deputy Under Secretary of Defense (Installations and Environment)

The FY 2012 AEMR complies with the following mandates (Appendix B):

- Section 548 of the National Energy Conservation Policy Act (NECPA) of 1978, which requires Federal agencies to describe their energy management activities;
- Section 2915 of title 10, United States Code (U.S.C.), which requires DoD to submit to Congress an AEMR describing its facility energy activities; and
- Section 2911 of title 10, U.S.C., which requires DoD to establish energy performance goals for transportation systems, support systems, utilities, and infrastructure and facilities.

The remainder of this report discusses DoD's efforts related to managing its facility energy program, reducing energy demand, increasing the supply of renewable energy, enhancing energy security, managing energy data and metering, funding energy projects, and reporting on federal building energy standards.



2. Facility Energy Program Management

The Deputy Under Secretary of Defense (Installations and Environment) (DUSD(I&E)), Facility Energy Program

The DUSD (I&E) is responsible for overseeing the Department's Facility Energy Program and progress to achieve the facility energy goals. The DUSD (I&E) reports to the Under Secretary of Defense (Acquisition, Technology and Logistics), and is responsible for issuing facility energy policy and guidance to DoD Components, coordinating DoD facility energy strategy and related programs, and engaging with the Military Services, Defense Agencies and other stakeholders. The DUSD (I&E) also coordinates all congressional reports related to facility energy. Figure 2-1 illustrates the organizational structure of the DUSD (I&E).

This section will describe the Defense Components' facility energy programs.

Army Facility Energy Program

The Deputy Assistant Secretary of the Army for Energy and Sustainability (DASA (E&S)) is the Senior Energy Official for the Army. The Army Energy Team comprises staff from the Office of the Assistant Secretary of the Army for Installations, Energy and Environment (ASA (IE&E)), Office of the Assistant Chief of Staff for Installation Management (ACSIM) and the Installation Management Command (IMCOM), U.S. Army National Guard (USARNG), U.S. Army Reserves (USAR), and the Army Materiel Command (AMC). The Army Energy Team collaborates with the U.S. Army Corps of Engineers (USACE), Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA (ALT)), the Army Staff, and other Army offices and commands (Figure 2-2).

Figure 2-1: ODUSD (I&E)



Figure 2-2: Army Facility Energy Governance Structure





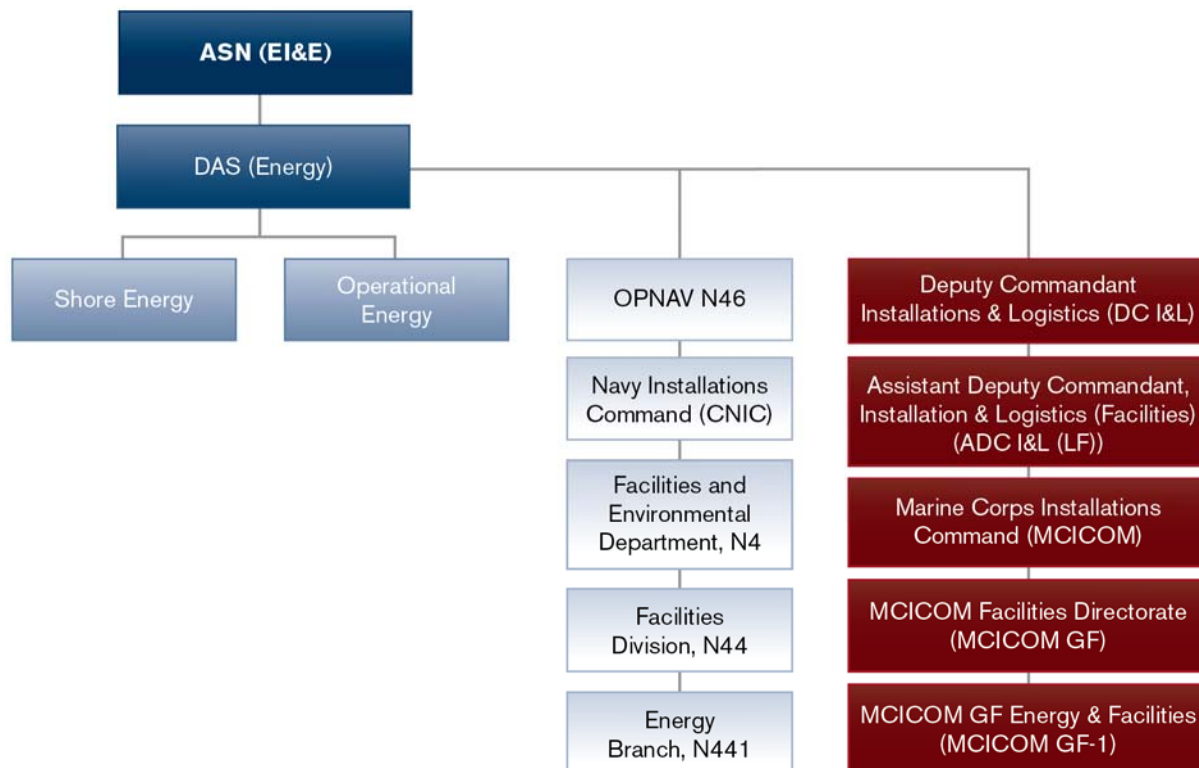
Office of the Deputy Under Secretary of Defense (Installations and Environment)

Department of the Navy (DON) Facility Energy Program

The Assistant Secretary of the Navy for Energy, Installations and Environment (ASN (EI&E)) is the designated senior DON official for energy who is responsible for formulating Department-wide policies, procedures, advocacy and strategic plans, as well as overseeing all DON functions and programs related to energy. The Deputy Assistant Secretary of the Navy for Energy (DASN (Energy)) reports to ASN (EI&E) and is the Chairman of the DON Shore Energy Policy Board.

The Office of the Chief of Naval Operations (CNO) Shore Installation Management Division (OPNAV-N46) is responsible for developing policy and programming resources for the Navy's Facility Energy Program. OPNAV N46 also ensures compliance with DON shore energy goals. The Commander, Navy Installations Command (CNIC) is responsible for current and future shore energy requirements across warfare enterprises. CNIC N441 is the energy branch within the Facilities Division (N44) of the Facilities and Environmental Department, N44. N441 is responsible for developing and integrating shore energy requirements across the Shore Enterprise. The Navy energy community consists of a broad range of subject matter experts, analysts, and program managers who are led by the senior Navy officials (Figure 2-3).

Figure 2-3: DON Facility Energy Governance Structure





Office of the Deputy Under Secretary of Defense (Installations and Environment)

The Deputy Commandant for Installations and Logistics (DC I&L) is responsible for establishing energy and water management policy for Marine Corps installations per direction from the Commandant to comply with federally mandated requirements. The Assistant Deputy Commandant for Installations and Logistics (Facilities) serves as the single point of contact responsible for program management and resourcing. The Commander, Marine Corps Installations Command (MCICOM) oversees program planning and execution. Direct support is provided by the Director, Facilities (MCICOM GF). The Energy and Facility Operations Section (MCICOM GF-1) serves as the Marine Corps Installations Energy Program Manager.

Naval Facilities Engineering Command (NAVFAC) provides facilities engineering support to the Navy and Marine Corps. The Deputy Commander for Operations at headquarters serves as the NAVFAC Energy Officer. The NAVFAC Energy Office is responsible for developing guidance and coordinating across NAVFAC commands. The NAVFAC Energy Office plans, develops, executes, and provides oversight of energy projects and processes for DON installations.

Air Force Facility Energy Program

The Air Force Energy Team comprises seven entities that work together to meet the Service-wide energy goals to reduce demand, increase supply, and change the culture:

- **Headquarters (HQ) U.S. Air Force (USAF):** Provides the policy, guidance, oversight, and resources to ensure an effective strategy is employed at all levels.
- **Major Commands (MAJCOMs):** Develop plans to support or supplement Air Force goals and strategies, execute programs, evaluate energy usage of subordinate units, and recognize the most successful units and energy practices.
- **Air Force Civil Engineer Center – Tyndall (formerly AFCEA):** Advises Headquarters U.S. Air Force and provides assistance to the MAJCOMs and installations in developing plans and strategies to meet mandated energy goals. It also manages and facilitates execution of energy programs as the central Program Management Office for facility energy and water conservation.
- **Air Force Civil Engineer Center – San Antonio (incorporates former AFCEE and AFRPA):** Advises Air Force Headquarters and provides assistance to the MAJCOMs and installations developing plans and strategies to meet mandated sustainable design and construction goals. It also manages and facilitates the Air Force Military Construction (MILCON) program. It also acts as the center of real estate excellence within the Air Force. Establishes Enhanced Use Lease (EUL) implementation guidelines and resolves program issues. Advocates use of Air Force resources to fund EUL project development.
- **Installations:** Develop plans to support or supplement Air Force and MAJCOM goals/strategies. Execute those plans, measure and evaluate their base energy usage, and nominate their most successful people and units for energy awards.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

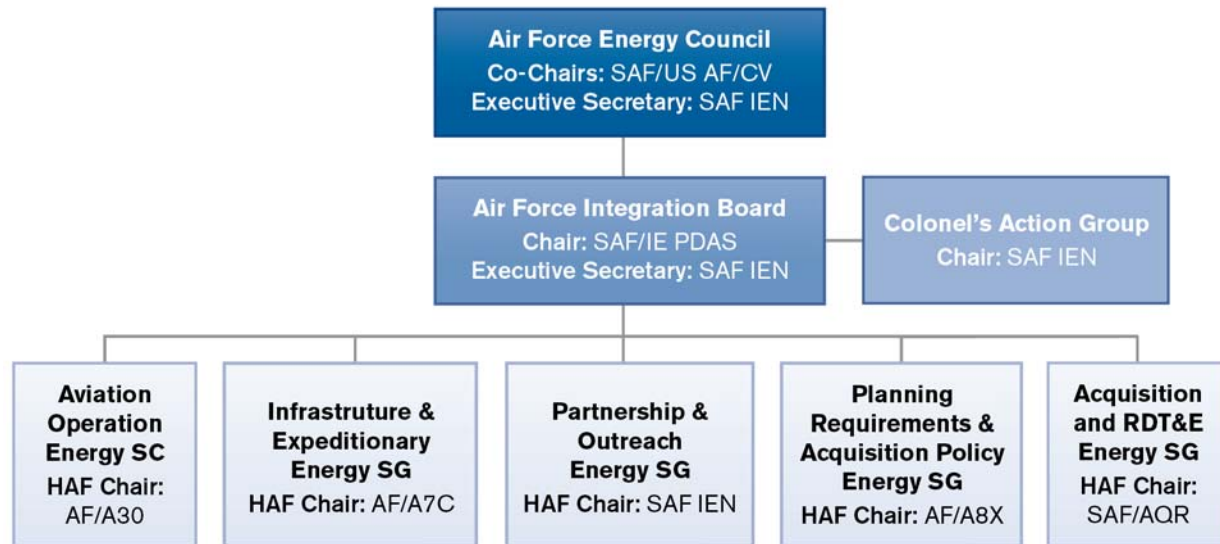
- **Installation Energy Manager:** Position required by Section 543 of the NECPA (42 U.S.C. § 8253). The scope of duties includes, but is not limited to, responsibility and oversight for the installation's Energy Management Plan, energy awareness, education and training, audits, utility billing, and energy and water consumption reporting.

The Air Force energy governance structure has three levels (Figure 2-4). The Air Force Energy Council provides global oversight to solve the complex energy challenges facing the Air Force. The Council also acts as a deliberative body responsible for developing the strategies and priorities and endorsing requirements as well as providing oversight of the Air Force efforts to achieve energy priorities, goals, and objectives. The Air Force Energy Council's scope extends to all energy acquisition, use, and conservation initiatives and issues within the Air Force. This includes initiatives related, but not limited to, the reduction of fuel use in aviation, ground motor vehicles, and equipment; conserving energy use at all properties under control of the Air Force, including installations and forward operating bases; developing alternative sources of energy and fuel; and identifying research and development opportunities. The Energy Integration Board (EIB) reports to the Energy Council and is responsible for aligning energy investments to goals and objectives across the Air Force. There are five energy steering groups under the EIB: Aviation Operations; Infrastructure and Expeditionary; Partnership and Outreach; Planning, Requirements and Acquisition Strategy; and Acquisition and Research, Development, Test, and Evaluation (RDT&E). Co-Chairs of the Energy Council, the Under Secretary of the Air Force (SAF/US), and the Vice-Chief of Staff of the Air Force (AF/CV) are the Senior Energy Officials within the Air Force. The Deputy Assistant Secretary of the Air Force for Energy (SAF/IEN) is the Executive Secretary of the EIB.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Figure 2-4: Air Force Energy Governance Structure



Defense Agencies Facility Energy Program

The Defense Agencies continue to develop and enhance their Facility Energy Management Program. Each Agency has a designated Senior Energy Official to administer their respective programs (Table 2-1).

Table 2-1: Defense Agencies Senior Energy Officials

DoD Component	Senior Energy Official
Defense Contract Management Agency (DCMA)	Energy Program Manager
Defense Commissary Agency (DeCA)	Energy Manager
Defense Finance and Accounting Service (DFAS)	Director, Support Services
Defense Intelligence Agency (DIA)	Chief, Engineering and Logistics Office
Defense Logistics Agency (DLA)	Installation Support Director
Missile Defense Agency (MDA)	Environmental Executive
National Reconnaissance Office (NRO)	Director, Management Services and Operations
National Geospatial-Intelligence Agency (NGA)	Director, Installation Operations Office
National Security Agency (NSA)	Technical Director for Installations and Logistics
Washington Headquarter Service (WHS)	Pentagon Energy Manager

The Intelligence Community (IC) in particular, has adopted a community-wide approach to maximizing energy and greening opportunities. The Office of the Director of National Intelligence has established an IC Energy Management Working Group comprised of individuals who have the subject matter expertise, and the authority to speak for the agency they represent.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

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3. DoD's Progress in Reducing Energy Demand

The Department is reducing its demand of facility energy through conservation and improving energy efficiency. The Department invests in conservation and efficiency projects that reduce costs and maximize payback. The majority of DoD investments are in the Military Departments' operations and maintenance accounts, to be used for sustainment and recapitalization projects. Such projects typically involve retrofits to incorporate improved lighting, high-efficiency heating, ventilation, and air conditioning (HVAC) systems, double-pane windows, energy management control systems, and new roofs. These investments have assisted DoD in achieving its best year-over-year improvement in energy efficiency, a 4.4 percent reduction in its energy intensity goal.

In addition to using appropriated funding to improve efficiency (both in the Components' own budget and the Energy Conservation Investment Program (ECIP)), DoD Components are leveraging private capital through the use of performance-based contracts to improve the energy efficiency of existing buildings. In response to the President's memorandum calling on the Federal Government to initiate \$2 billion worth of performance-based contracts (over FY 2012, FY 2013, and the first quarter of FY 2014), the Department has awarded \$343 million in FY 2012.

Facility Energy Demand Overview

DoD distinguishes facility energy from operational energy. Facility energy includes energy needed to power fixed installations and non-tactical vehicles. Operational energy is the energy required for training, moving, and sustaining military forces and weapons platforms for military operations, including energy used by tactical power systems, generators, and weapons platforms.

This section describes the scope of the Department's facility energy demand in terms of cost and consumption. Operational and facility energy continue to represent approximately 80 percent of total Federal energy consumption. This makes DoD the single largest consuming entity in the U.S., with its energy consumption comparable to that of Denmark's.

Facility energy comprises approximately 22 percent of total Federal energy consumption. Facility energy is also approximately five times the total energy consumption of the next closest Federal agency (the U.S. Postal Service). The Department's FY 2012 facility energy consumption amounts to 1 percent of the total U.S. commercial sector's energy consumption.²

² Energy Information Administration (EIA), *Annual Energy Review 2013: Energy Consumption by Sector and Source* [online source] (Washington, D.C., 2012, accessed February 4, 2013), available on the Internet at <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=EARLY2012&subject=0-EARLY2012&table=2-EARLY2012®ion=1-0&cases=full2011-d020911a,early2012-d121011b>.

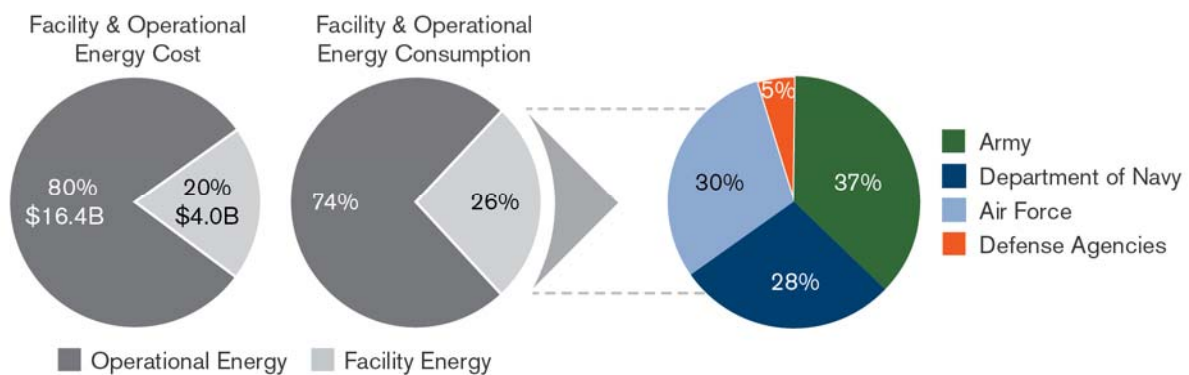


Office of the Deputy Under Secretary of Defense (Installations and Environment)

In FY 2012, the Department's total energy bill was \$20.4 billion. DoD spent \$4.0 billion on facility energy, which included \$3.8 billion to power, heat, and cool buildings and \$0.3 billion to supply fuel to the fleet of non-tactical vehicles. Facility energy represented 20 percent of the Department's total energy expenditures.

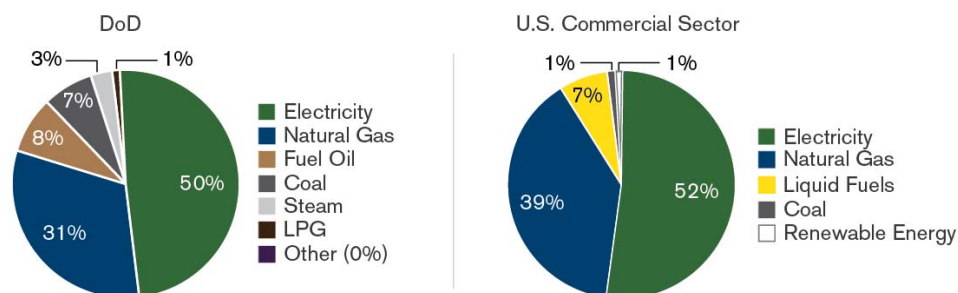
In FY 2012, DoD consumed 215,100 billion British thermal units (BBtu) of facility energy, which represented 26 percent of the Department's total energy consumption. DoD consumed 204,000 BBtu in buildings (stationary combustion), and 11,100 BBtu in non-tactical fleet vehicles (mobile combustion). The Army is the largest consumer of facility energy, followed by the Air Force, and DON (Figure 3-1).

Figure 3-1: DoD FY 2012 Facility Energy Consumption and Cost



Electricity and natural gas accounted for over 80 percent of DoD facility energy consumption. The remaining portion of facility energy consumption includes fuel oil, coal, and liquefied petroleum gas (LPG) (Figure 3-2). DoD's facility energy consumption mix mirrors that of the U.S. commercial sector, where natural gas and electricity dominate the supply mix.

Figure 3-2: DoD Facility Energy FY 2012 and U.S Commercial Sector Stationary Combustion Fuels by Type



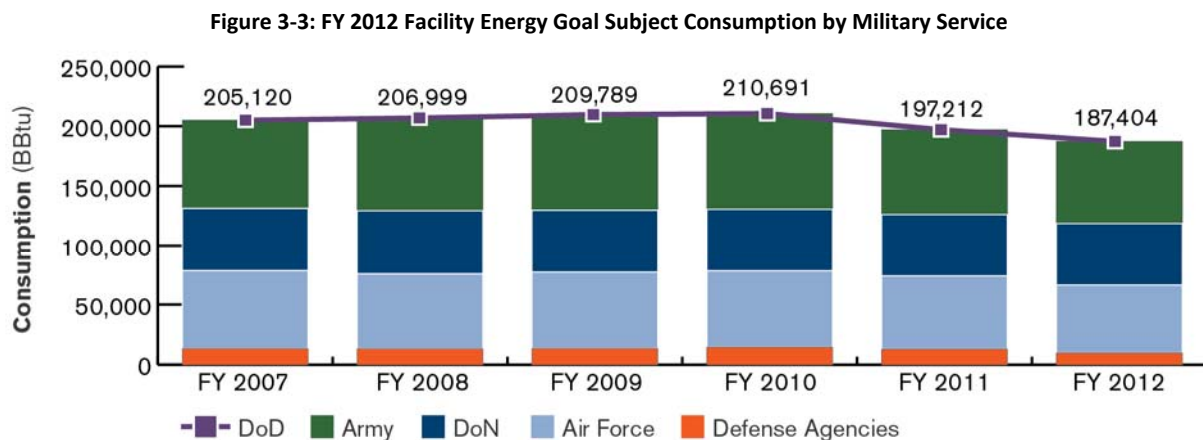


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Energy Intensity

DoD measures energy intensity in BBtu per gross square foot (GSF) of facility space.³ Section 543 of the NECPA mandates a 3 percent annual reduction in energy intensity relative to a baseline year (FY 2003) or a 30 percent overall reduction from the baseline by FY 2015. The Energy Independence and Security Act (EISA) 2007 further distinguishes two categories of buildings: those subject to the energy intensity reduction goal and those that can be excluded.⁴ This section discusses energy intensity for DoD goal-subject buildings.

In FY 2012, DoD consumed 187,000 BBtu of energy in its goal-subject buildings and 16,600 BBtu in goal-excluded buildings. Figure 3-3 illustrates recent historical trends in facility energy consumption by DoD Components, across goal-subject buildings.



DoD energy intensity has decreased since FY 2003. Figure 3-4 illustrates DoD's and the Military Services' progress toward the EISA 2007 goal. Despite falling short of the FY 2012 intensity reduction goal of 21 percent, DoD reduced its energy intensity by over 4 percent from FY 2011 levels. In FY 2012, DoD's energy intensity reflected a 17.7 percent reduction from the FY 2003 baseline.

³ Energy intensity does not include energy consumption from non-tactical vehicles.

⁴ The criteria evaluated for excluding facilities include: impracticability due to energy intensiveness or national security function, completed energy management reports, compliance with all energy efficiency requirements, or implementation of all cost-effective energy projects in the buildings. This energy intensity section discusses only goal-subject buildings. Source: U.S. Department of Energy (DOE), Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Guidelines Establishing Criteria for Excluding Buildings* [online source] (Washington, D.C., 2006, accessed March 18, 2013), available on the Internet at http://www1.eere.energy.gov/femp/pdfs/exclusion_criteria.pdf.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Figure 3-4: DoD Energy Intensity EISA 2007 Goal Attainment⁵

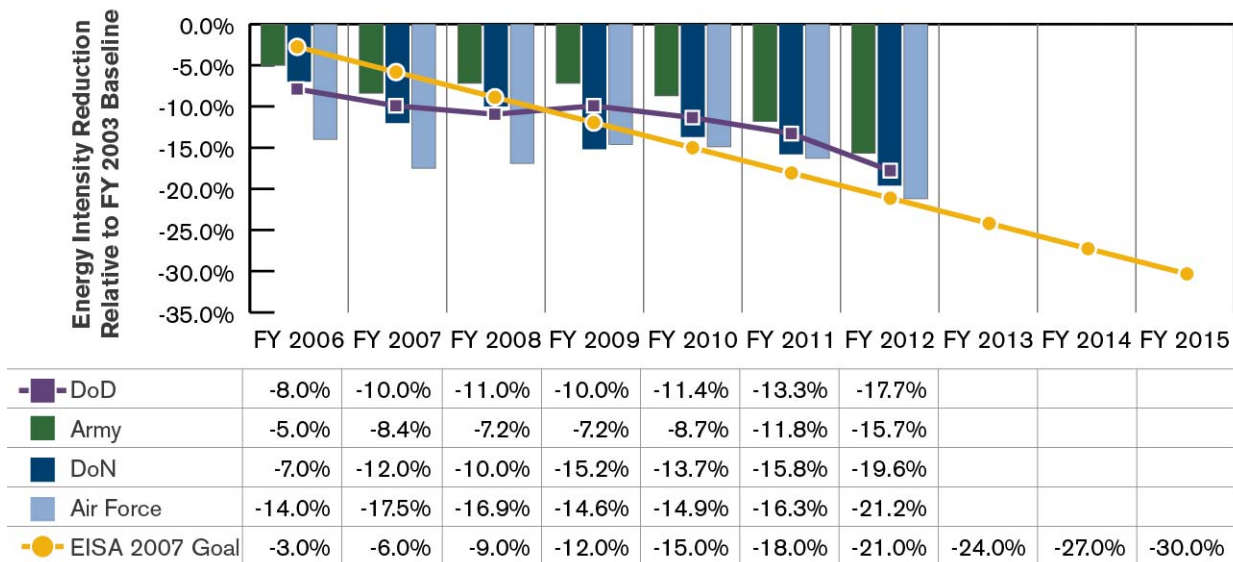


Table 3-1 summarizes annual energy intensities across the Department from FY 2008 to FY 2012 as well as FY 2012 reductions from the FY 2003 baseline.

⁵ The DoD trend line accounts for the Defense Agencies. In FY 2012, DON and Air Force made corrections to their FY 2003 energy intensity baseline, improving data quality and aligning the baseline to evolving guidance and policy. DoD continues to collect Navy and Marine Corps data separately. In FY 2012, the Navy achieved an intensity reduction of 19.1 percent while the Marine Corps achieved an intensity reduction of 18.9 percent relative to their FY 2003 baseline.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Table 3-1: Energy Intensities Across DoD

DoD Component	FY 2003 Baseline Intensity (Btu/GSF)	FY 2008 Intensity (Btu/GSF)	FY 2009 Intensity (Btu/GSF)	FY 2010 Intensity (Btu/GSF)	FY 2011 Intensity (Btu/GSF)	FY 2012 Intensity (Btu/GSF)	FY 2012 Reduction Relative to Baseline
DoD	117,334	103,692	104,527	102,929	100,268	96,596	-17.7%
Army	97,248	89,802	93,051	91,499	85,739	82,002	-15.7%
DON	127,018	109,550	103,245	105,036	103,263	102,092	-19.6%
Air Force	140,165	113,368	116,529	116,090	114,154	110,486	-21.2%
DeCA	146,052	139,623	136,703	136,182	138,595	135,411	-7.3%
DFAS	151,807	101,445	93,338	96,755	77,800	87,602	-42.3%
DLA	51,385	60,832	49,563	49,425	52,497	48,416	-5.8%
DIA	229,108	216,622	216,972	194,736	201,166	175,866	-23.2%
WHS	179,000	187,000	184,000	185,000	181,000	173,530	-3.1%
NGA	177,040	195,803	218,140	212,516	169,458	121,579	-31.3%
NSA	263,456	256,728	281,260	286,849	292,726	295,033	12.0%
DCMA	104,425	126,299	130,494	129,435	N/A	119,070	14.0%
NRO	N/A	N/A	N/A	N/A	276,357	276,197	N/A
MDA	N/A	N/A	186,061	N/A	N/A	N/A	N/A

In FY 2010, DoD began to track and report energy consumption and square footage at individual installations. This has allowed the Department to monitor energy intensity by installation as well as the Component level. Appendix E summarizes FY 2012 installation-level data.

In FY 2012, the Department increased investments in energy efficiency and conservation. These investments will be implemented over a number of years. The benefits from these investments will accrue after they are fully implemented. Therefore, measurements of energy efficiency improvements in FY 2012 reflect investments made in prior years. DoD made significant energy efficiency and conservation investments in FY 2009 and FY 2010 as part of the American Recovery and Reinvestment Act (ARRA), and these investments could be a significant driver in DoD's efficiency performance in FY 2011 and FY 2012.



Army

Despite the increases in military activity at U.S. installations, the Army reduced its energy intensity by 15.7 percent from its FY 2003 baseline. The Army accomplished this decrease through various activities such as joint basing, a combination of increased senior-level energy program leadership, and increased conservation efforts by installation energy users.

The Army identified key factors that contributed to its continued progress in FY 2012, including implementing the *Installation Management Campaign Plan*, which modernizes facilities, installs new technologies, and leverages partnerships that will provide an increased level of energy security leading to sustainable and resilient infrastructure and mission assurance. The Army also issued operation orders that significantly contributed to its continued energy intensity reduction. These orders direct specific actions supporting installation energy management programs, to include:

- Appointing in writing full-time energy managers;
- Including energy and water conservation responsibilities in position descriptions of key positions that affect energy management to ensure compliance with program requirements;
- Establishing quarterly energy steering committees;
- Implementing building energy monitor programs;
- Conducting quarterly training and awareness programs;
- Developing energy security plans;
- Maintaining accurate energy management program data;
- Performing comprehensive energy and water evaluations;
- Reviewing new construction and repair project plans and specifications for conformance with energy program requirements;
- Implementing no-cost, low-cost conservation measures; and,
- Pursuing use of appropriated funds and alternative financing for implementing facility improving energy efficiency projects.

In FY 2012, the Army awarded 20 Energy Savings Performance Contract (ESPC) task orders equating to \$208.2 million in investments, 11 Utility Energy Services Contract (UESC) projects equating to \$19 million in investments, and executed \$49.7 million in ECIP funds across 13 projects at 11 installations with a projected annual cost savings of \$3.3 million and an annual energy savings of 171 BBtus. The Army also applied over \$100 million of appropriated funds toward energy efficiency and water conservation projects, resulting in expected energy savings of nearly 350 BBtu per year starting in FY 2013.



DON

In FY 2012, DON reduced its energy intensity by 19.6 percent relative to its FY 2003 baseline. The Navy reduced its energy intensity by 19.1 percent and the Marine Corps reduced its energy intensity by 18.9 percent relative to the baseline year. DON is utilizing thermal energy from the waste heat of six cogeneration systems to help meet reduction goals. On-site source energy credits accounted for 4.5 percent of DON's energy intensity reduction, the largest single technology contribution.⁶ However, DON did not reach the 21 percent goal in FY 2012. One contributing factor was the insufficient number of energy efficiency projects awarded in prior years to maintain the annual 3 percent reduction. Another determinant was the lack of funding for energy audits, resulting in missed opportunities to identify improvements in energy efficiency. Energy efficiency opportunities programmed for FY 2013 and FY 2014 are expected to continue DON's progress in reducing its energy consumption.

In January 2011, DON launched its "Energy Program for Security and Independence" aimed at reducing installation energy consumption by 50 percent by FY 2020 relative to a FY 2003 baseline. To achieve this, DON's Energy Program for Security and Independence supports the implementation of a variety of energy efficiency and conservation initiatives that aim to curtail energy consumption and improve resource management. Recent and planned Navy energy initiatives include:

A Utility Energy Service Contract (UESC) for energy conservation at Naval Air Station Whiting Field will upgrade energy management infrastructure of 12 facilities and is projected to save 14,850 MBtus and 1.3 million gallons of water annually, avoiding energy costs of over \$300,000 per year.

- Facility energy audits;
- The adoption of advanced metering and integration with energy management systems;
- Building recommissioning;
- RDT&E on innovative energy technologies; and,
- Partnerships with industry to implement cutting-edge technologies.

In FY 2012, DON identified a baseline correction in 17 Navy installations and 4 USMC installations. DON found previously unreported energy consumption, removed privatized housing from two USMC installations, and established a baseline for Camp Lemonnier which has only recently been considered a Navy installation. DON also identified new exclusions of simulator and transmitter facilities. This type of exclusion is permitted by Section 543 of NECPA, as amended. Lastly, DON corrected baselines in Guam that had been calculated during a 23-day power outage caused by a typhoon. Baselines at Guam installations now represent typical energy consumption in FY 2003. Due to this effort, DON's FY 2003 baseline increased from 122,610 Btu/GSF to 127,018 Btu/GSF. The Navy's and USMC's FY 2003 baselines increased to 135,904 Btu/GSF and 98,266 Btu/GSF, respectively.

⁶ There is an allowable Federal credit toward the energy intensity goal for more efficient on-site power uses.



Air Force

In FY 2012, the Air Force's energy intensity reflected a 21.2 percent reduction from the FY 2003 baseline, a 4.8 percent reduction from its level in FY 2011. The Air Force was able to exceed its energy intensity reduction goal through aggressive energy project investments and focus on appropriate ESPC and ECIP projects. The Air Force is committed to a robust energy management program. In FY 2012, the Air Force's energy priorities included improving resilience, ensuring supply, reducing demand, and fostering an energy culture. The Air Force's success in meeting the energy intensity reduction goal was achieved despite a number of constraints cited by Air Force Energy Managers, including difficult project economics due to low utility rates, construction activity increasing energy use, and a year which reflected more severe weather.

FY 2012 performance exceeded expectations and demonstrated the benefits of energy awareness and culture change. Awareness and culture change are complementary philosophies to implement energy efficient technologies. The Air Force continues to improve its existing program, conduct facility audits to identify opportunities for energy conservation and efficiencies, hire Resource Efficiency Managers at its installations, and retro-commission existing facilities to improve energy consumption. Across the Air Force, MAJCOMs and installation energy managers identified five principal factors that contributed to the Air Force's continued progress in FY 2012:

- Continued use of Resource Efficiency Managers at each base and MAJCOM;
- Building retro-commissioning programs to improve energy consumption of older facilities;
- Updating and replacing systems for improved energy efficiency;
- The use of third-party investments for energy projects; and,
- Shared best practices.

In FY 2012, the Air Force centrally funded 202 energy conservation projects, saving an estimated \$26 million and 1,600 Btu annually. Additionally, the Air Force completed sustainable infrastructure assessments at 27 installations. In FY 2013, the Air Force expects to complete energy audits on 75 percent of its buildings to identify additional energy efficiency opportunities.

The Air Force also identified a baseline correction at its installations in FY 2012. The Air Force Audit Agency conducted a baseline study and found errors in reported baseline energy consumption. Additionally, the study found that baseline square footage revisions were required. Due to this baseline correction effort, the Air Force's FY 2003 baseline increased from 136,437 Btu/GSF to 140,165 Btu/GSF.

In July 2012, the Air Force awarded an ESPC at Tinker AFB. This \$81 million dollar project decentralizes the boiler plants, replacing them with smaller, more efficient boilers in 70 buildings. This project will save nearly 500,000 MBtus annually.



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Defense Agencies

In FY 2012, the Defense Agencies continued to pursue opportunities to reduce energy intensity. Examples of these initiatives are the following:

- DLA awarded \$14.6 million to fund energy projects in FY 2012, with anticipated savings of 14.7 BBtus. DLA continues to focus on lighting, heating, and air conditioning projects. DLA implemented warehouse lighting upgrades from high pressure sodium or metal halide to T5 or T8 with occupancy sensors, light-emitting diode (LED) outdoor street and buildings lights, and boiler replacements with high efficiency condensing technology.
- DIA installed seven heat recovery chillers in FY 2012, which have reduced natural gas use by 26 percent in one year. DIA also completed a lighting efficiency project which reduced electricity use by 4 percent.

DLA Energy Initiatives



- NSA upgraded 13 buildings at NSA Headquarters with more energy efficient lighting fixtures, lamps, and ballasts. The estimated annual energy savings is 36,000 million Btus (MBtu).
- WHS funded nearly \$10 million in energy conservation initiatives, including recommissioning, metering, energy audits, and lighting projects. WHS also is completing a retrocommissioning energy initiative in Wedge 1 of the Pentagon and initiated a second phase in the basement, mezzanine, and Remote Delivery Facility of the Pentagon, anticipating savings up to 100,000 MBtu.



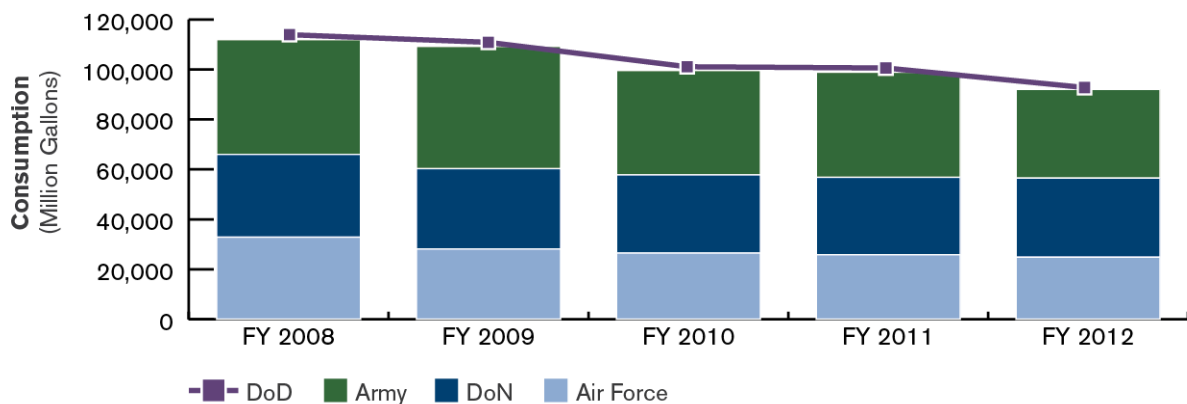
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Potable Water Consumption and Intensity

Executive Order (EO) 13423 requires Federal agencies to achieve a 16 percent reduction in potable water intensity by FY 2015 compared to a FY 2007 baseline. EO 13514 extends the reduction goal to 26 percent by FY 2020. DoD potable water consumption has been decreasing since FY 2008. In FY 2012, DoD facilities consumed over 90 billion gallons of potable water (Figure 3-5), with the Military Departments accounting for 98 percent of total DoD potable water consumption.

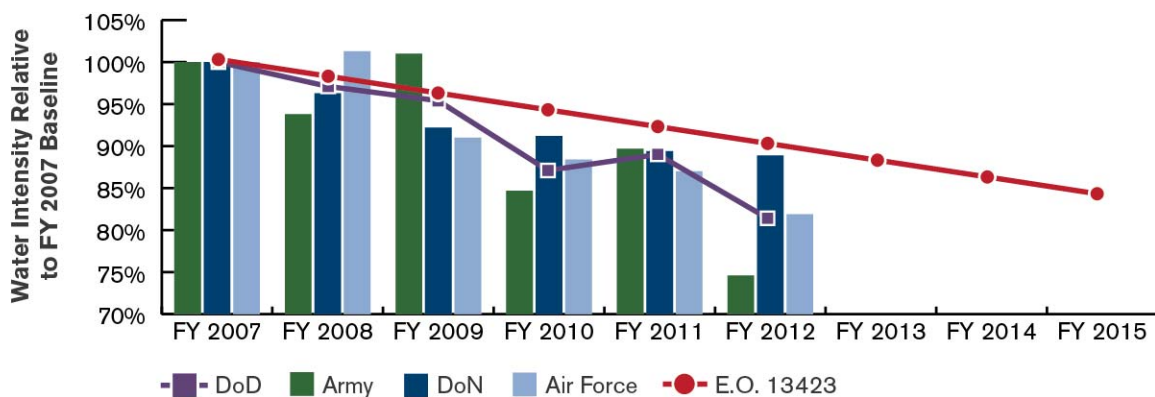
Potable Water includes water purchased from a utility (water) provider and all fresh water (e.g., well and streams) that is treated and added to the domestic (for human consumption) system.

Figure 3-5: DoD Potable Water Consumption FY 2008 – FY 2012



DoD's potable water intensity in FY 2012 was 18.6 percent below its FY 2007 baseline (Figure 3-6), ahead of the 10 percent reduction goal.

Figure 3-6: DoD Water Intensity EO 13423 Goal Attainment





Army

In FY 2012, the Army's potable water intensity was 25 percent below its FY 2007 baseline. The Army released its *Installation Management Water Portfolio* in April 2011. The portfolio describes the Army's water management strategies that installations can use to streamline potable water consumption, increase efficiency of use, and expand the use of recycled and reclaimed potable water. In FY 2012, the Army implemented a number of water conservation initiatives, including installing water saving plumbing fixtures, sink taps, waterless urinals and dual flush toilets.

Tobyhanna Army Depot, PA, has implemented water reuse in industrial and sewage treatment plant operations, offsetting potable water use. The installation regularly conducts potable water leak detection surveys using acoustic leak detection sensors, and has reduced its potable water intensity by 38% compared to the FY 2007 baseline.

DON

In FY 2012, the Navy's potable water intensity was 6 percent below its FY 2007 baseline. In FY 2012, the Marine Corps potable water intensity was 24 percent below its FY 2007 baseline. DON has installed low flow bathroom fixtures, such as sink aerators, showerheads, toilets, and urinals to reduce potable water intensity in its buildings. Other projects in FY 2012 also focused on repairing leaks and partnering with Navy Exchange to install water-efficient washers at a laundry facility.

Naval Base Ventura County is demonstrating an integrated suite of commercially available "smart water" conservation technologies for irrigated landscapes, such as advanced evapotranspiration irrigation controllers, centralized and site-specific sensor inputs, efficient water delivery systems, and rooftop rainwater and HVAC water condensate harvesting systems to displace potable water consumption for irrigation.

Air Force

In FY 2012, the Air Force's potable water intensity was 18 percent below its FY 2007 baseline. The Air Force has reduced potable water intensity through leak detection and infrastructure repairs, replacing and upgrading water fixtures, disconnecting irrigation systems, incorporating Leadership in Energy and Environmental Design (LEED) design principles for water, and using non-potable water sources where possible.

Aviano Air Force Base plans to install irrigation and stormwater systems, saving 18.5 million gallons annually.

Defense Agencies

In FY 2012, the Defense Agencies continued to pursue opportunities to reduce potable water intensity. Examples of these initiatives include:

- DIA has installed low-flow fixtures as well as commissioned a non-potable well for process water and irrigation.
- The DLA Richmond facility implemented water conservation projects to eliminate water storage tanks that required frequent flushing and replaced portions of the in-ground cast iron water lines that were leaking. DLA also installed smart water meters at three sites to identify water savings opportunities.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

- DeCA is requiring low-flow toilets and urinals with electronic flush sensors for new and renovated commissaries. DeCA also requires electronic sensor control valves on hand-wash lavatories.
- NSA has reduced potable water use by purchasing reclaimed or recycled water for use in cooling towers. NSA is also incorporating low flow fixtures into remodels and new sites in order to alleviate demand on local water supplies.
- NRO developed small scale programs for water conservation, including the use of waterless urinals at some facilities.
- WHS is implementing water meters throughout the Pentagon Reservation to identify water savings opportunities. WHS also plans to install an automatic boiler blow down system that is expected to reduce 5 million gallons of potable water use annually.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Industrial, Landscaping, and Agricultural (ILA) Water Consumption

In FY 2009, EO 13514 established a new water reduction goal. The goal requires Federal agencies to reduce ILA water consumption by 2 percent annually, or 20 percent by FY 2020, relative to a FY 2010 baseline. DOE's Federal Energy Management Program (FEMP) is currently developing guidance to assist Federal agencies to interpret and implement the ILA water consumption reduction goal.

Industrial, Landscaping, and Agriculture (ILA) Water includes naturally occurring water (e.g., lake, well, river water that is not treated [fresh]) used in an ILA application. ILA also includes any non-potable water metered by and purchased from a third party.

DoD Components use standard methodologies to measure ILA consumption and identify strategies to reduce usage. DoD participated in a Federal inter-agency water working group to develop guidelines and identify challenges and mitigation strategies associated with meeting the ILA goal. DoD understands that DOE will soon issue new guidance regarding ILA consumption.

Army

The Army continues to implement initiatives to decrease ILA water consumption at its installations. For example, the Joint Systems Manufacturing Center applies waterless technologies to reduce overall water consumption. The facility has converted existing paint booths from a water-wash filtering system to a dry filter system that uses no water. All paint booths have been converted or installed with dry filter systems, including the new pre-treat and paint line for the Expeditionary Fighting Vehicle paint process.

DON

DON is pursuing a variety of projects to reduce its ILA water consumption. For example, Naval Air Station Corpus Christi entered into an agreement to bring effluent water from the city's waste water treatment plant to the installation's golf course. The Marine Corps continues to renovate athletic fields with artificial turf, lowering both water and maintenance costs, and install central irrigation control systems to monitor and manage all of the potable and reclaimed irrigation lines.

Air Force

The Air Force was able to reduce its ILA water consumption through xeriscaping⁷ and implementing recycling projects for landscaping applications. While the Air Force was able to achieve the ILA water consumption reduction goal in FY 2012, it faced challenges from climatic factors and low payback for water conservation projects.

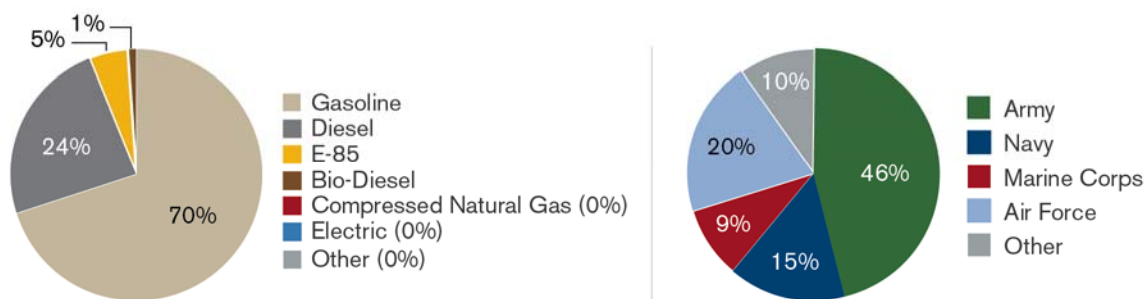
⁷ Xeriscaping is a landscaping method developed especially for arid and semi-arid climates that utilizes water-conserving techniques (such as the use of drought-tolerant plants, mulch and efficient irrigation).



Non-Tactical Fleet Vehicles Petroleum Consumption

Section 400FF of the Energy Policy and Conservation Act, as amended by EISA § 142, requires Federal agencies to achieve a 20 percent reduction in non-tactical fleet vehicle petroleum consumption by FY 2015 compared to a FY 2005 baseline. EO 13514 extends the reduction goal to 30 percent by FY 2020. Fleet vehicle fuel consumption accounts for 5 percent of DoD's facility energy consumption and is largely comprised of gasoline. Diesel fuel represents 24 percent of the fuel mix while alternative fuels make up the remaining fleet vehicles' fuel mix. The Military Departments account for more than 90 percent of the Department's petroleum consumption (Figure 3-7).⁸

Figure 3-7: FY 2012 Fleet Vehicle Petroleum Consumption



In FY 2012, DoD fleet vehicles consumed 68.3 million gallons of gasoline equivalent (GGE) of petroleum, which includes gasoline, diesel, and the diesel portion of biodiesel blends (80 percent of a B20 blend). The mix of petroleum fuel types has remained relatively stable over the past six years, and the use of alternative fuel vehicles (AFVs) has steadily increased. In FY 2012, 6.1 percent of the total fleet vehicle consumption was from alternative fuels. Alternative fuels include biodiesel, compressed natural gas (CNG), ethanol (E85), and hydrogen.

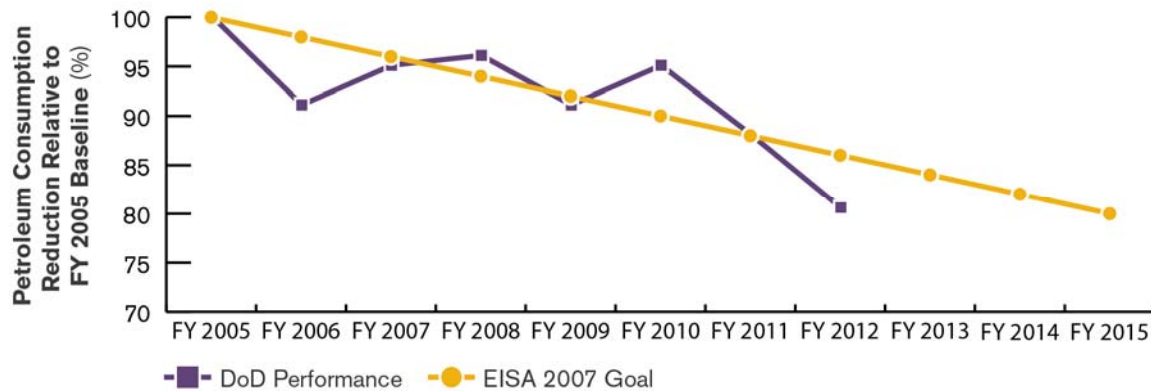
⁸ "Other" category includes U.S. Army Corps of Engineers and the Defense Agencies.



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In FY 2012, petroleum consumption was 19.5 percent below the baseline (Figure 3-8). DoD continues to pursue replacement of fleet vehicles with more efficient models, Alternative Fuel Vehicles (AFVs), and hybrid electric vehicles to decrease petroleum consumption.

Figure 3-8: DoD Fleet Vehicle Petroleum Consumption, EISA 2007 Goal Attainment



Army

In FY 2012, the Army's petroleum consumption in fleet vehicles was 28.5 percent below its FY 2005 baseline. The Army continued to downsize and right size its non-tactical vehicle (NTV) fleet of 72,000 vehicles by eliminating Class IV or larger vehicles (e.g., Suburban, Yukon, and Crown Victoria) and downsizing Class III sports utility vehicles (SUVs) not required for specific missions (e.g., law enforcement, fire and emergency services). In FY 2012, 300 Class III and IV SUVs were identified for replacement with smaller more fuel-efficient vehicles, and only 15 were approved for retention.

Low-speed electric utility vehicles at Fort Sam Houston, TX



DON

In FY 2012, the Navy's petroleum consumption in fleet vehicles was 20 percent below its FY 2005 baseline. The Marine Corps consumption was 23 percent below its baseline. DON is committed to using AFVs, fuel-efficient technologies, and fleet optimization to reduce petroleum consumption. The Navy has contracted for the development of 20 AFV infrastructure sites to be completed in FY 2013, including E85/B20, solar carport electric vehicle charging stations, and standalone electric vehicle charging stations. In FY 2012, the Navy purchased 168 low-speed electric vehicles (LSEVs) to replace full-size vehicles.

Solar-powered vehicle at NAVFAC Southeast in Jacksonville, FL





Office of the Deputy Under Secretary of Defense (Installations and Environment)

The Navy is participating with the General Services Administration (GSA) in an electric vehicle pilot program. Nine Chevy Volts and two Nissan Leafs were integrated into the fleet this past year. The Navy plans to participate in GSA's Electric Vehicle Pilot and has installed electric vehicle charging stations for these vehicles in FY 2012. The Navy is also leading a demonstration project to evaluate emerging medium and heavy diesel hybrids. The Navy began testing two pairs of demonstration vehicles in early 2011. As a follow-up to this project, the Navy was awarded additional funds to complete a demonstration of a plug-in hybrid bucket truck in Hawaii.

Air Force

In FY 2012, the Air Force's petroleum consumption in fleet vehicles was 1.7 percent above its FY 2005 baseline. The Air Force gives preference to procuring the most fuel- and cost-effective AFVs, hybrid electric vehicles, or plug-in electric vehicles to meet their fleet's requirements. In FY 2011, the Air Force announced that Los Angeles Air Force Base will be the first DoD installation to have an all-electric fleet. Andrews Air Force Base has identified 55 vehicles to participate in the DoD Plug-in Electric Vehicle Program. Additionally, the Air Force is deploying devices to monitor and reduce vehicle idling in its domestic fleet. The Air Force is evaluating the logistics to relocate AFVs where it already has access to alternative fuels and install new alternative fuel infrastructure on bases where there is demand.



Defense Agencies

In FY 2012, the Defense Agencies accounted for 3 percent of DoD fleet petroleum consumption. Strategies to reduce petroleum consumption in fleet vehicles include:

- DIA reduced the number of vehicles permanently assigned to individuals; increased the use of teleconferencing and videoconferencing; requested AFVs, hybrid vehicles, and electric vehicles; and operated shuttle buses to and from the DIA headquarters facility.
- NSA is committed to reducing petroleum consumption and makes every effort to purchase hybrid vehicles and AFVs. NSA's current fleet includes 41 hybrid vehicles and 347 AFVs.
- NRO has installed a bio-diesel dispenser at its Westfields facility. NRO has also incorporated AFVs and hybrid vehicles into its fleet and is reducing fleet size where appropriate.



4. Increasing DoD's Supply of Renewable Energy

In addition to reducing the demand of facility energy consumption, DoD is increasing the supply of renewable and other forms of distributed (on-site) energy on installations. DoD is investing in cost effective renewable and distributed energy solutions. DoD's strategy not only considers cost-effective solutions that maximize payback, but also considers renewable and distributed solutions that make installations more energy secure.

DoD Renewable Energy Performance

As DoD pursues renewable energy to advance its energy security, it also seeks to comply with legal requirements to increase renewable energy. DoD is subject to two renewable energy goals put forth in 10 U.S.C. § 2911(e) and Section 203 of the Energy Policy Act (EPAc) 2005. The 10 U.S.C. §2911(e) goal measures the total renewable energy (electric and non-electric) production and procurement as a percentage of total facility electricity consumption, while the EPAc 2005 goal measures total renewable electricity consumption as a percentage of total facility electricity consumption. The EPAc 2005 goal for FY 2010–2012 is 5 percent, while the 10 U.S.C. §2911(e) goal is 15 percent by FY 2018⁹ and 25 percent by FY 2025. In addition, the Army, DON, and Air Force have each established a goal to install 1 GW of renewable energy on or near their installations (Table 4-1).

Table 4-1: Renewable Energy Goals: Understanding the Differences Between EPAc 2005, 10 U.S.C 2911(e)¹⁰, and the Services' 1 GW Initiatives

	EPAc 2005	10 U.S.C. §2911(e)	Service 1 GW Initiatives
Goal	5 percent in FYs 2010–2012, and 7.5 percent in FY 2013 and each FY thereafter	15 percent by FY 2018 25 percent by FY 2025	Each Service – 1 GW of renewable capacity ¹¹
Numerator	Renewable Electricity Consumed	Renewable Energy Produced or Procured	Total Renewable Energy Capacity Producing on or Near Installations
Denominator	Total Electricity Consumed	Total Electricity Consumed	N/A
Unbundled Renewable Energy Credits (RECs) Purchases	Yes	No	No
Renewable Energy Purchases	Yes	Yes	No

⁹ This interim renewable energy goal was established as part of the Energy Performance Master Plan in the FY 2011 AEMR. See Appendix C for details on DoD energy goals.

¹⁰ See Appendix F for the House Armed Services Committee Letter on the 10 U.S.C § 2911 (e) goal.

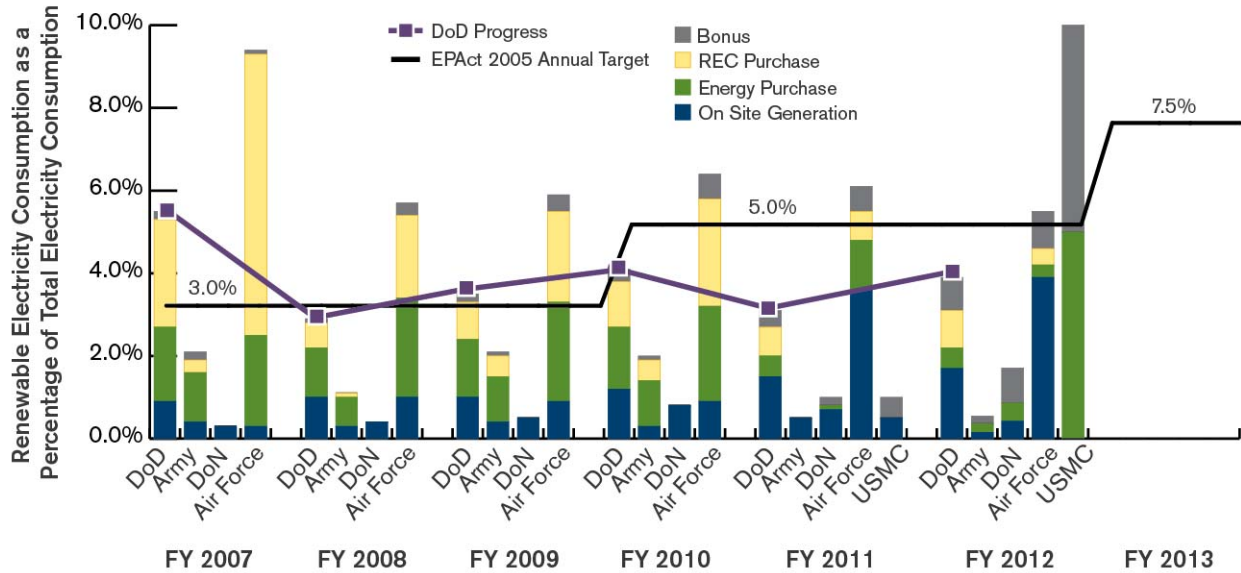
¹¹ Each Service has an independent target year for its 1 GW goal attainment.



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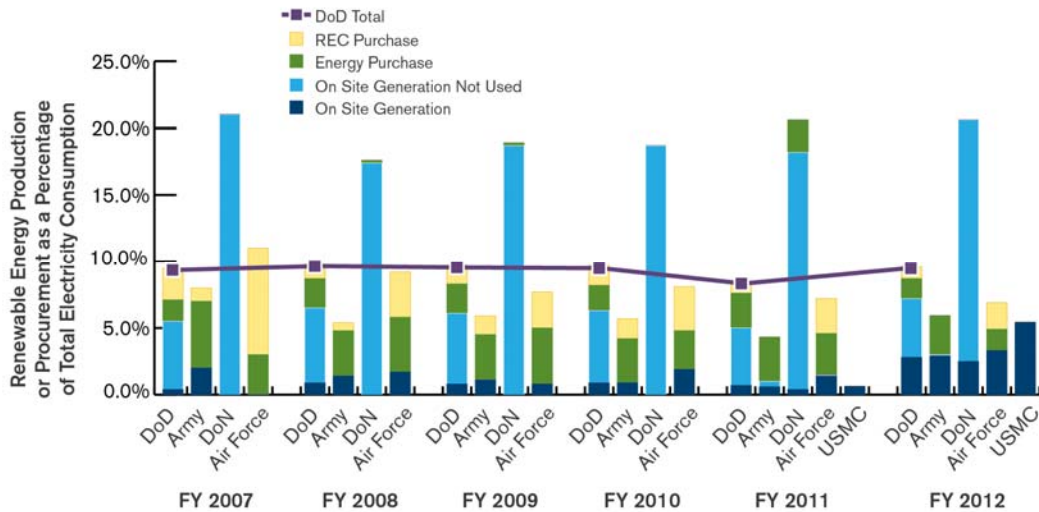
In FY 2012, DoD did not achieve the EAct goal. Renewable electricity consumption subject to the EAct 2005 goal accounted for 4.0 percent of DoD's total electricity consumption. This is 1.0 percent below the FY 2012 EAct 2005 renewable energy goal of 5.0 percent (Figure 4-1).

Figure 4-1: EAct 2005 Renewable Energy Goal Attainment



DoD continued to make progress in achieving the 10 U.S.C. §2911(e) FY 2018 interim and FY 2025 renewable energy goal. Total production and procurement of renewable energy was 9.6 percent of total facility electricity consumption (Figure 4-2).

Figure 4-2: 10 U.S.C §2911(e) Renewable Energy Goal

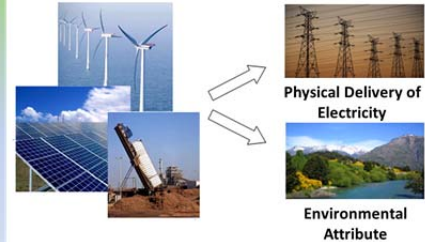




Office of the Deputy Under Secretary of Defense (Installations and Environment)

In FY 2012, purchases of Renewable Energy Credits (RECs) fell to 9.7 percent of the total renewable energy contribution toward the 10 U.S.C. §2911(e) goal. EAct and 10 U.S.C §2911(e) treat RECs for goal attainment differently. The EAct goal requires DoD to retain RECs for goal attainment. However, retaining RECs is not a requirement to meet the 10 U.S.C. §2911(e) goal.

- ✓ Renewable Energy Credits (RECs), also known as green tags, renewable energy certificates, are tradable, non-tangible instruments that represent the environmental attributes of renewable energy generation. Each REC represents the generation of 1MWh of electricity from an eligible source of renewable energy.
- ✓ RECs may be sold bundled (paired with the physical delivery of electricity), or unbundled (as a stand-alone paper product). When combined with the physical electricity, RECs become functionally equivalent to green power purchases from a local utility.



RECs are a valuable financial tool for the development of large-scale renewable energy projects. RECs are attractive to project developers because they can lower capital (upfront) costs of projects. DoD strives to achieve an acceptable tradeoff between retention of RECs to meet its EAct goal, and to take advantage of the full economic benefits of selling them to encourage project development. DoD does not believe that procuring unbundled RECs (those RECs not tied to a renewable energy project) is a desirable substitute for renewable energy production that provides energy security for bases.

To meet the reporting requirement under Title 10, Section 2925, Subsection (a)(4), DoD began tracking RECs associated with new third party financed renewable energy projects in FY 2012. In FY 2012, DoD had one bundled REC purchase as a result of a new third party financed renewable energy project.

The Department uses various authorities to increase the supply of renewable and other distributed (on-site) sources of energy on its installations. DoD uses both appropriated funds and non-governmental (sometime referred to as 'third-party') financing to pursue renewable energy technologies. DoD partners with private entities to enable the development of large-scale renewable energy projects and relies on congressional appropriations to fund cost-effective small scale distributed generation projects. The main authorities to pursue third-party financing of renewable energy projects are Energy Production Facility Agreements (EPFAs), Power Purchase Agreements (PPAs), and Enhanced Use Leases (EULs) (Table 4-2).



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Table 4-2: Funding Mechanisms

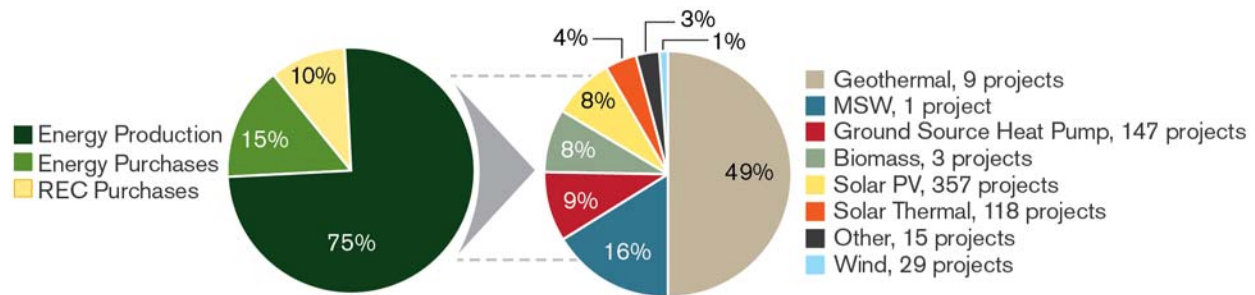
Funding Mechanism	Authority	Definition
Energy Production Facility Agreement (EPFA)	10 U.S.C. § 2922(a)	A contract enabling the DoD to enter into agreements for the provision and operation of energy production facilities and the purchase of energy from such facilities.
Power Purchase Agreement (PPA)	10 U.S.C. § 2410q	An agreement enabling the DoD to enter into a contract for the purchase of electricity from sources of renewable energy.
Energy Enhanced Use Leases (EULs)	10 U.S.C. § 2662 and § 2667	<p>An EUL for the production of energy allows an installation to lease land to a lessee in return for cash or in-kind contributions. For renewable energy projects that use the authority found under 10 U.S.C. § 2667, DoD requires that the Military Department demonstrate more than a mere passive activity. For production or procurement of facility energy to qualify as being consistent with the DoD energy performance goals and master plan (and consequently qualify for an energy certification), DoD must engage in one of the following:</p> <ul style="list-style-type: none"> • Consumption by the DoD Component of some or all of the facility energy from the project or • Structure the project to provide energy security for the installation by, e.g., retaining the right to divert to the installation the energy produced by the project in times of emergency • Reinvestment in renewable facility energy or energy conservation measures of a minimum of 50 percent of proceeds (including both in-kind and cash) from any lease.

In FY 2012, DoD had nearly 700 renewable energy projects. These projects generated approximately 7,500 BBtu per year, which represents 75 percent of the total amount of renewable energy produced or procured. Coupled with purchases of renewable energy and RECs, which represent 15 percent and 10 percent of the total supply mix respectively, DoD produced and procured more than 10,000 BBtu of renewable energy in FY 2012. Geothermal electric power is by far the most significant renewable energy source in DoD, accounting for nearly half of the Department's renewable energy goal attainment. Municipal solid waste is used for both electricity and steam production, and accounts for 16 percent of the Department's renewable energy production. There are 147 ground source heat pump (GSHP) projects throughout DoD, contributing 9 percent of the total renewable energy produced on DoD installations. Biomass and biogas from captured methane make up 8 percent of the supply mix, followed by 357 solar photovoltaic (PV) systems contributing to approximately 8 percent of the supply mix. Figure 4-3 illustrates DoD's renewable energy supply mix by technology type.



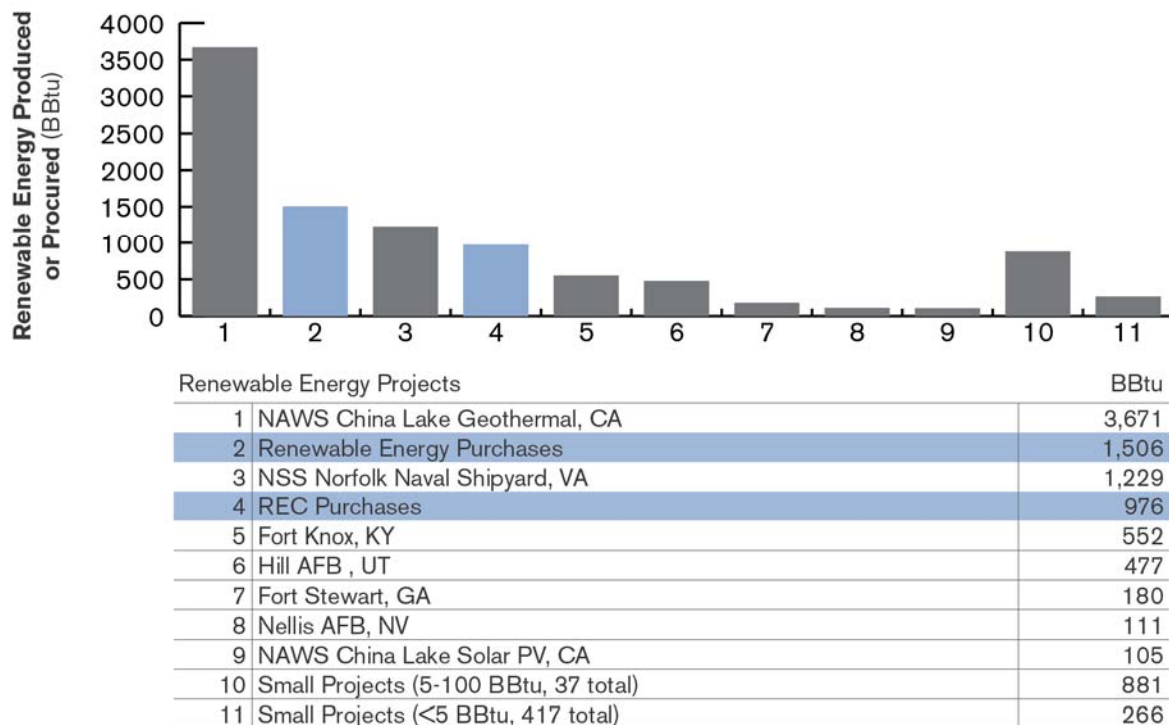
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Figure 4-3: DoD Renewable Energy Supply Mix by Technology Type



The largest renewable energy project across DoD is the Navy's China Lake geothermal power plant in California, which supplies nearly half of the Department's renewable energy production. The second largest renewable energy project in DoD is a waste-to-energy project at the Norfolk Naval Shipyard in Virginia that produces both electricity and steam (Figure 4-4). DoD Components continue to implement numerous small distributed generation projects. In FY 2012, 454 renewable energy projects generated less than 100 BBtu.

Figure 4-4: DoD Renewable Energy Projects FY 2012





Army

The Army did not achieve the EAct renewable energy goal in FY 2012, consuming 0.5 percent of electricity from renewable energy sources. Performance will improve in the coming years by the efforts of the Army Energy Initiatives Task Force (EITF) which has been charged to develop partnerships with the private industry to develop on-site renewable generation. Rather than pursuing purchases of renewable energy from off-site, the Army focus continues to be on implementing on-site energy improvements to increase renewable energy production and energy security on its installations.

The Army increased performance toward the 2911(e) goal, producing or procuring 5.9 percent of electricity from renewable energy sources versus 4.3 percent in FY 2011. This increase in renewable energy production is attributed to the increase in the number of total renewable energy projects. The Army expects to improve on its 2911(e) goal as it continues to pursue alternative financing agreements with the private sector to implement large-scale renewable energy systems on Army installations. In FY 2012 the Army contracted for or began to install 16.3 MW of new renewable electrical capacity. A total of 14.1 MW of renewable energy was awarded in FY 2012 through alternative financing agreements, and an additional 2.2 MW of renewable energy was awarded through ECIP.



In September 2011, the Army established the Energy Initiatives Task Force (EITF) to focus on the development of large-scale (> 10 MW), third-party financed renewable energy projects across its installations. The mission of EITF is to secure Army installations with energy that is clean, reliable, and affordable. Under the leadership of the EITF Executive Director, projects are carried from concept to implementation seeking to create a balanced enterprise approach to ensure energy security and surety of access to an energy supply, energy price stability, economic benefit, and compliance with energy mandates and goals. EITF uses an enterprise-level approach to initiate, execute, and manage cost-effective, large-scale renewable energy projects on Army installations. These efforts aim to enhance energy security and sustainability, and support the Army's goal of developing 1 GW of renewable energy on its installations by 2025.

DON

In FY 2012, DON did not achieve the EAct renewable energy goal, consuming 3.3 percent of electricity from renewable energy sources. The Navy's progress against EAct in FY 2012 was 1.7 percent, while the Marine Corps achieved its EAct goal by consuming 9.9 percent of electricity from renewable sources.

DON increased performance toward the 2911(e) goal by producing or procuring 17.7 percent of electricity from renewable sources. The Navy produced or procured 20.6 percent of its electricity from



Office of the Deputy Under Secretary of Defense (Installations and Environment)

renewable energy sources, well within reach of the renewable energy goal of 25 percent by 2025¹². The Marine Corps produced or procured 5.4 percent of electricity from renewable sources.

DON has made significant strides in achieving the 2911(e) goal by its focus on large-scale renewable energy projects. Two Navy projects currently account for nearly 50 percent of DoD's 2911(e) goal achievement. These two renewable energy projects are the Naval Air Weapons Station (NAWS) geothermal project at China Lake, CA and the municipal solid waste (MSW) project at Norfolk Navy Shipyard (NNSY), Portsmouth, VA. The China Lake project accounts for 37 percent and the NNSY project accounts for 12 percent of DoD's 2911(e) goal achievement. At both locations, the electricity generated is sold to the utility and not consumed by the installation. However, at NNSY, the steam generated from the municipal solid waste plant is consumed by the installation.

While Navy's progress toward the 2911(e) goal remained constant at 20.6 percent, the China Lake project did generate 6.2 percent less electricity in FY 2012, or the equivalent of 72,000 megawatt hours. Although there have been numerous improvements resulting in more efficient use of the geothermal resource at China Lake over the past 25 years, a decline in power production is typical for a liquid-dominated geothermal resource with long-term continuous liquid production. Further options to increase the efficiency of the plant are currently being explored.

On January 24, 2012, in the State of the Union address, President Obama announced that DON is embarking on an aggressive renewable energy strategy to install 1 GW of renewable energy on or near DON installations. DON's 1 GW goal initiative is designed to support the achievement of the SECNAV's goal to "supply, by FY 2020, 50 percent of the energy DON consumes with alternative energy". The DON renewable energy goal is



¹² It is possible to have significant disparities in performance between the two renewable energy goals: EPlact 2005 and 2911(e). For the Navy, an overwhelming majority of the renewable energy produced on base comes from the Navy's China Lake geothermal electric power plant. However, the Navy does not consume any of this electricity. Since renewable electricity must be consumed to count toward the EPlact goal (as discussed earlier in Section 3), the Navy is precluded from counting this electricity toward the EPlact goal. This electricity generation, however, counts toward the 2911(e) goal.



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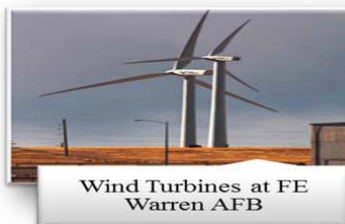
twice as aggressive as the DoD 10 U.S.C. 2911(e) goal. Hence, by implementing its 1 GW initiative, DON expects not only to meet the SECNAV goal but also to exceed the 2911(e) goal.

Overall, DON's strategy for achieving its renewable energy goals is two-fold: first to drive down consumption and energy intensity, and then to encourage cost-effective renewable energy investments. DON continues to leverage the authority granted by 10 U.S.C. §2922(a), which allows it to engage in long-term energy production facility contracts for up to 30 years. Recent examples in FY 2012 of the Navy's progress toward, and continued support of renewable energy goals, include:

- In February 2012, Fleet Activities Yokosuka installed a thin-film solar system to the roof of a commissary. It is the largest thin-film solar installation of any type in the Navy. The project is estimated to save the Navy \$300,000 in annual energy costs.
- In April 2012, ground broke on a 1.23 MW solar farm that will eventually provide electricity to more than 600 military homes in Hawaii. NAVFAC Hawaii partnered with the private developer, Forest City, to install the ground-based array, which will start providing energy in early FY 2013.
- In May 2012, NAS Jacksonville completed the installation's largest rooftop solar power generating system. The system, consisting of 2,534 solar PV panels is estimated to contribute about 25 percent of the hangar's electricity consumption.
- In June 2012, MCAS Miramar's 3 MW landfill gas project began producing enough electricity to power approximately 2,000 homes.

Air Force

The Air Force exceeded the EAct renewable energy goal in FY 2012, consuming 5.5 percent of electricity from renewable energy sources. The Air Force also made progress toward the 2911(e) goal by producing or procuring 6.9 percent¹³ of its electricity from renewable energy resources in FY 2012. The Air Force was able to continue its progress toward both renewable energy goals by executing renewable energy projects, purchasing commercial renewable energy, and purchasing RECs. However, the Air Force performance toward the EAct goal fell from 6.0 percent in FY 2011 due to a reduction in REC purchases. The Air Force began centralizing



¹³ Air Force's 6.9% progress toward the 2911(e) goal includes 2% of REC contributions. Removing REC contributions would result in 4.9% progress toward the 2911(e) goal.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

REC purchases in FY 2011, and was able in FY 2012 to accurately estimate the number of RECs needed for purchase, thus eliminating overpurchase of RECs and continuing to practice good stewardship of resources.

The Air Force is taking advantage of opportunities to incorporate renewable energy on its installations. It has conducted assessments on the resource availability and the economic feasibility of developing renewable energy projects, and it established its Renewable Energy Project Development (REPD) Subpanel. In FY 2012, the Air Force had approximately 256 renewable energy projects on 89 sites either operating or under construction. The Air Force also established the REPD Subpanel to coordinate renewable efforts and to leverage knowledge and resources across the Air Force. The Subpanel provides leadership for and coordination of renewable energy projects by providing a forum, process, and tools for evaluation and decision-making.

The Air Force renewable energy plan focuses on the development of on-base electric and non-electric renewable projects that are cost-competitive. Low, local commercial utility rates challenge the Air Force to implement renewable projects. To face this challenge the Air Force is establishing innovative partnerships with private sector developers. Because of varying regional benefits such as REC sales, tax rebates, and other incentives, the Air Force's strategy is to rely on non-governmental third-party financed mechanisms to pursue large-scale renewable energy projects. The Air Force estimates the majority of renewable energy projects over the next five years to be executed through third-party investments. These third-party investments could reach approximately \$1 billion over the next five years, while the Air Force plans to invest \$51 million over the same period in appropriated funds.

In support of the renewable energy goals, the Air Force established an aggressive "1,000 MW" initiative (1 GW goal—the capacity to produce a total of 1 GW of renewable energy on or near Air Force installations) that relies on a process that allows the Air Force to manage and execute projects from concept to production. The Air Force renewable energy process typically begins with preliminary studies at the installation or MAJCOM. The studies may be conducted in collaboration with academia, industry, or private developers. Preliminary concepts and opportunities are then evaluated and selected to undergo further validation. This validation includes feasibility for specific renewable energy technologies, opportunity assessments to identify a base's requirements, a scope and mission impact assessment, a review of possible environmental issues, and a business case evaluation. Renewable energy projects are selected for implementation as part of the Air Force's renewable energy project evaluation process.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Defense Agencies

The Defense Agencies continue to implement renewable energy projects on their facilities. However, most Defense Agencies operate in buildings rather than campuses or installations. This limits the Defense Agencies' ability to implement renewable energy projects. However, the Defense Agencies continue to consider cost-effective, small-scale, distributed renewable generation. Specifically, the following are initiatives the Defense Agencies undertook in FY 2012:

- DIA is installing 21 solar photovoltaic (PV) lights over a new 3 acre parking lot. DIA is also pursuing a large PV array on the DIA headquarters roof and north parking lots.
- DLA is installing a solar thermal domestic water heating system at its Columbus site. The Richmond site has an operational PV system, solar thermal domestic water heating systems, and GSHPs. DLA recently completed construction of a solar thermal wall and is currently studying the feasibility of a 13 MW solar PV project and a 1.6 MW wind project.
- NSA has implemented solar crosswalk signs, a solar thermal hot water heater, and solar lighting in its parking lots. NSA is also currently constructing PV lights as well as a vegetative roof on both its North and South Campus utility plants.
- WHS has implemented several small renewable projects including solar parking lot lighting, a solar hot water project, and solar light towers. WHS continues to examine opportunities to implement renewable energy systems such as small-scale wind, GSHPs, and PV panels.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Potential for Renewable Energy on Military Installations

DoD's installations are well situated to support solar, wind, geothermal, and other forms of distributed energy. However, DoD does face challenges in deploying renewable energy on its installations. These challenges include project economics, long lead times, technological efficiencies and equipment degradation, and limited transmission access.

To address challenges associated with financing of renewable energy projects, DoD published its *Financing of Renewable Energy Projects Policy* in November 2012. DoD's policy on financing renewable energy projects is located at the following website:

The DoD Components face challenges and constraints as they pursue their aggressive renewable energy plans. These challenges include:

Project Economics: Changes in the market place, requirements for state renewable portfolio standards, the value and ownership of RECs and regional electricity prices are among the regulatory, economic and market conditions that significantly influence the interest of private sector entities.

Long Lead Times: Large renewable projects involve multiple parties and stakeholders. These projects are complex and require lengthy processes that involve multiple stages of approvals. DoD continues to collaborate to streamline coordination processes and improve communication channels for expedited approval and certification.

Withdrawn Lands: Many DoD installations sit on lands withdrawn for military purposes. These lands are controlled and owned by the Department of Interior (DOI) and developing renewable energy on these lands can be challenging with each project possibly requiring different inter-agency agreements and efforts.

Technological Efficiencies and Equipment Degradation: The performance of renewable energy projects decreases over time. Over time, solar panels become less efficient and the output rate of deep geothermal wells degrade. DoD needs to continuously pursue renewable energy projects to replenish its existing pipeline capacity.

Limited Transmission Access: Transmission constraints (caused by either a lack of physical infrastructure or congestion in the existing infrastructure) create competition between DoD and other private sector entities.

http://www.acq.osd.mil/ie/energy/library/Policy_Financing%20of%20Energy%20Projects%209Nov2012.pdf. While the challenges associated with deploying renewable energy are expected to persist into the future, DoD continues to assess the potential for renewable energy on its military installations.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

The text box to the right describes the factors that DoD considers in the evaluation of renewable energy potential on military installations. The renewable energy assessment in this section explores the potential of renewable energy sources on DoD installations based on economic, technical, and regulatory attributes. This assessment included the feasibility of siting solar energy on Creech and Nellis Air Force Bases in response to the Senate Committee on Appropriations Report on Department of Defense Appropriations Bill, 2013 (Senate Report 112-196) (Appendix G).

Opportunities for the development of renewable energy depend not only on the availability of renewable resources, but more importantly, on a number of key factors necessary to provide adequate market, financial and regulatory environments for a project to be cost-effective. These include:

Local demand for energy: Without a large enough population of energy users and available grid connections, there may be little demand for new renewable sources;

Local / regional energy prices: Areas with higher electricity prices may experience more development of renewable energy resources because higher market prices for the electricity allow higher cost technologies (such as renewables) to compete in the market place;

Regulatory incentives: Federal, state, and local programs may offer low cost loans, loan guarantees, grants, tax incentives and technical assistance to reduce renewable energy startup and operations costs. Other market drivers include renewable portfolio standards and special agreements such as feed-in tariffs, which allow facilities to sell renewable energy directly back to the utility;

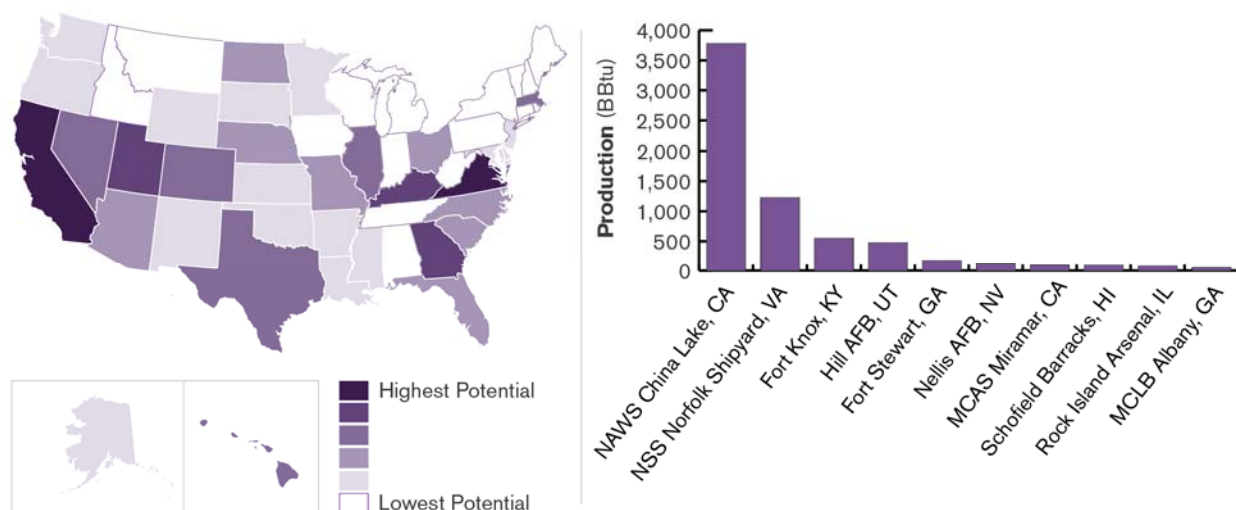
Location: Proximity to and adequacy of high voltage transmission lines and power demand centers;

Financing: Access to capital, particularly private financing for large scale, utility-size renewable energy developments; and

Developable land: land availability and suitability.

In FY 2012, DoD produced over 7,500 BBtu of renewable energy. Figure 4-5 illustrates DoD FY 2012 renewable energy production by state, with the darker purple shading indicating higher production. The bar chart illustrates the FY 2012 top renewable energy producing installations.

Figure 4-5: DoD FY 2012 Renewable Energy Production

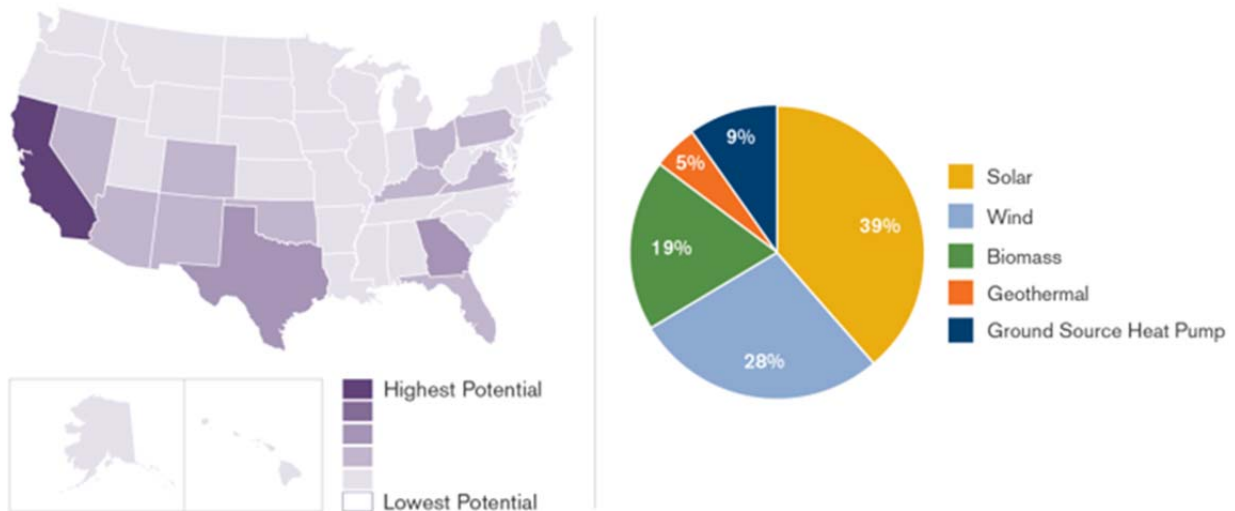




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DoD identified over 17,000 BBtu of renewable energy potential across the U.S. Figure 4-6 illustrates the distribution of the renewable energy potential by state, type, and DoD Component. The map with purple shading illustrates DoD's renewable energy potential by state, where the darker purple represents a higher potential. The pie chart illustrates renewable energy potential by technology-type. Appendix G contains an assessment of each installation's renewable energy potential by DoD Component.

Figure 4-6: DoD Renewable Energy Potential





Office of the Deputy Under Secretary of Defense (Installations and Environment)

Army

In FY 2012, the Army produced 1,075 BBtu of renewable energy. Thermal energy accounted for 82 percent of the total production. Figure 4-7 illustrates the Army's top renewable energy-producing installations and the map illustrates the production by state (darker green shading represents higher production) in FY 2012.

Figure 4-7: Army FY2012 Renewable Energy Production

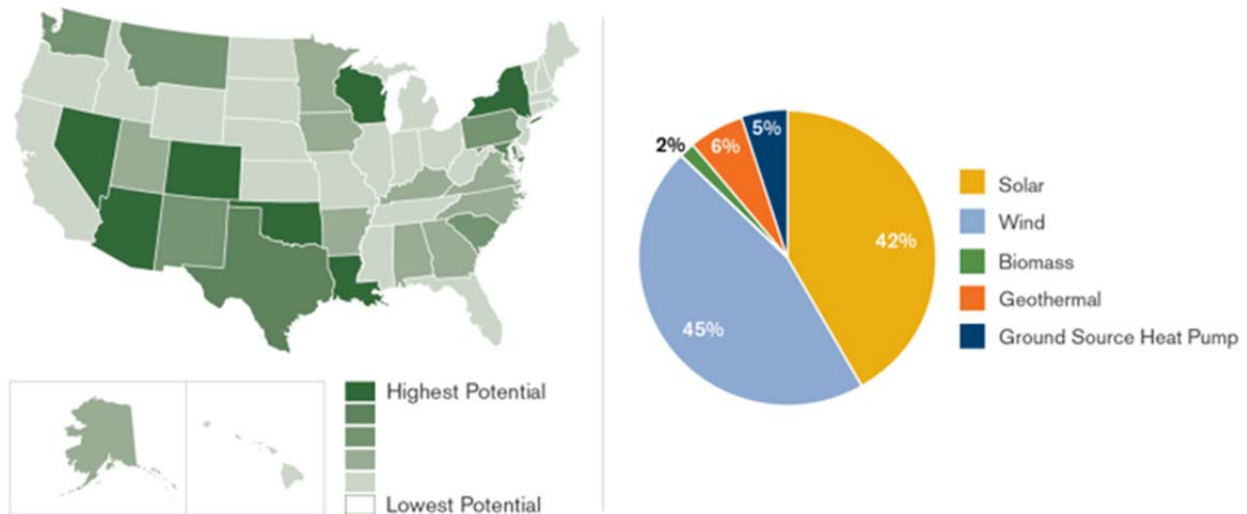




Office of the Deputy Under Secretary of Defense (Installations and Environment)

The Army identified over 19,000 BBtu of renewable energy potential on its installations. The map in Figure 4-8 illustrates the potential for renewable energy production by state, where darker green represents higher potential and the pie chart breaks out the renewable energy potential by technology-type.

Figure 4-8: Army Renewable Energy Potential



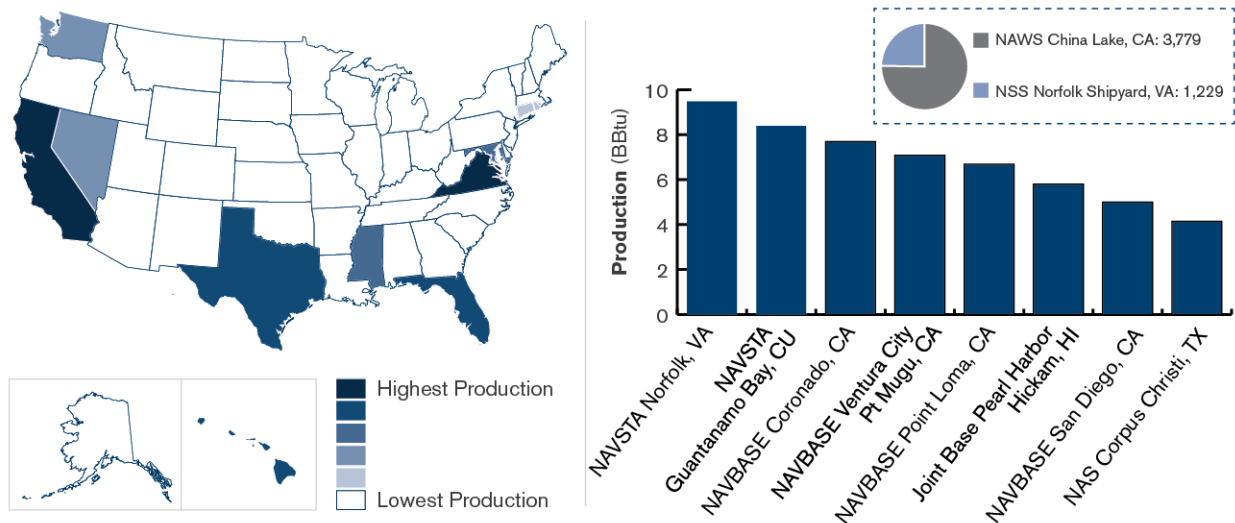
DON

In FY 2012, DON produced 5,471 BBtu of renewable energy. The Navy produced 5,151 BBtu of renewable energy, primarily through the top two renewable energy producing installations, Naval Air Weapons Station China Lake, California, and Norfolk Naval Ship Yard (NNSY) Norfolk, Virginia. Figure 4-9 shows the Navy's top renewable energy-producing installations and the map illustrates the production by state (darker navy blue shading representing higher production) in FY 2012.



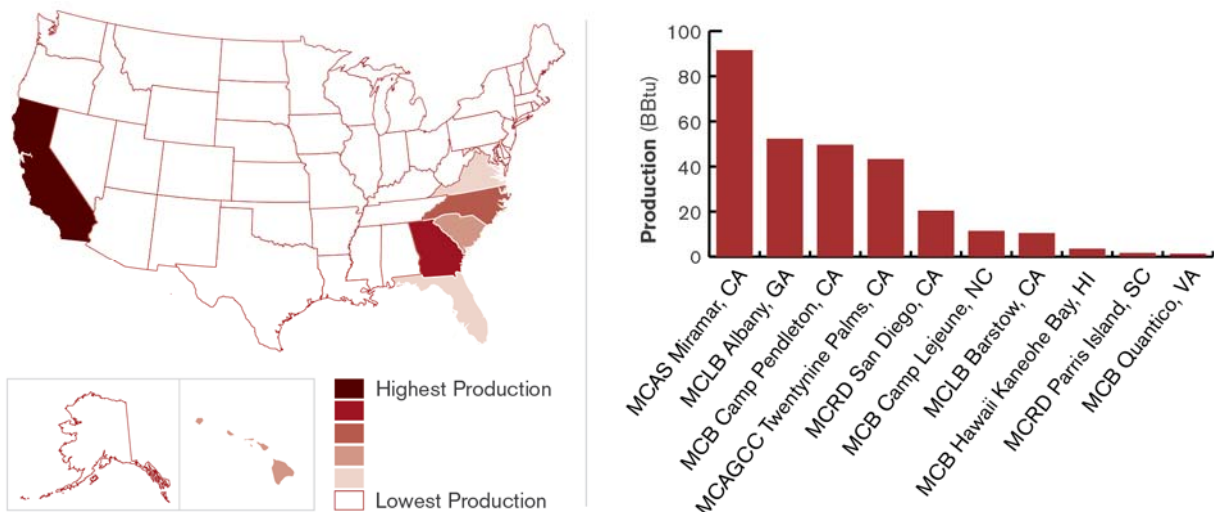
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Figure 4-9: Navy FY 2012 Renewable Energy Production



In FY 2012, the Marine Corps produced 320 BBtu of renewable energy. Renewable electricity production accounted for 91 percent. The bar chart in Figure 4-10 illustrates the Marine Corp's top renewable energy-producing installations and the map illustrates the production by state (darker red shading representing higher production) in FY 2012.

Figure 4-10: Marine Corps FY 2012 Renewable Energy Production

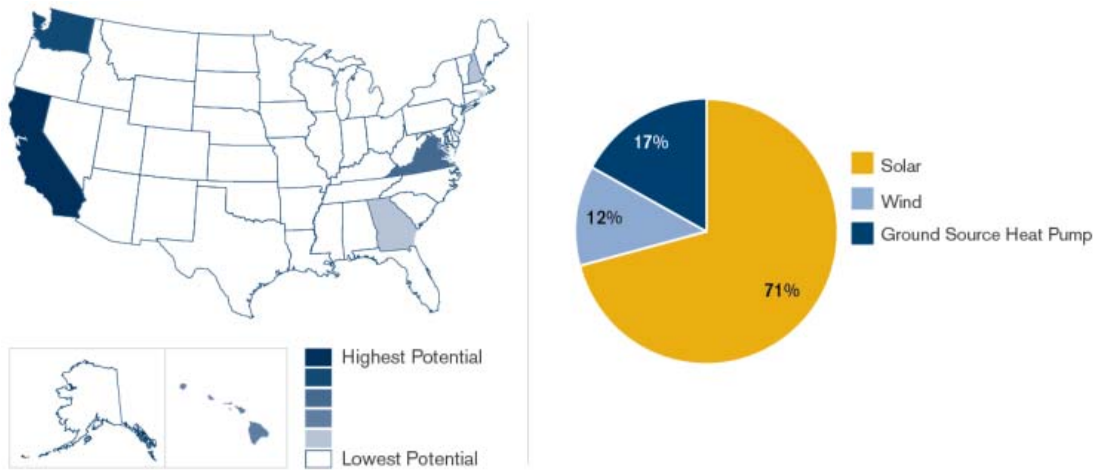


DON identified over 200 BBtu of potential renewable energy that could be developed on its installations. The map in Figure 4-11 illustrates the potential for renewable energy production by state, where the darker navy blue represents higher potential. The pie chart in Figure 4-11 represents the breakout of renewable energy potential by technology-type for DON.



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Figure 4-11: DON Renewable Energy Potential



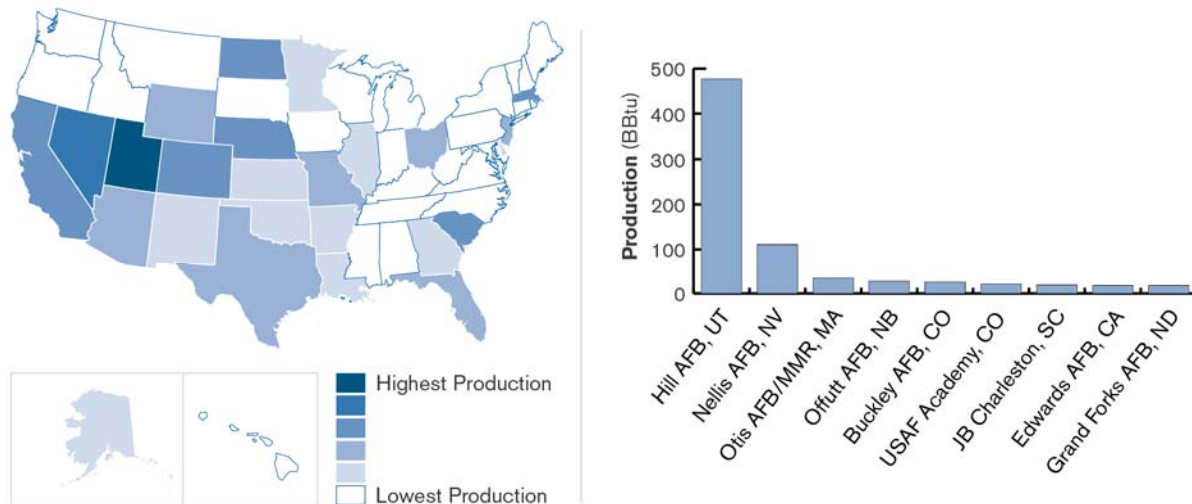
Air Force

In FY 2012, the Air Force produced 1,026 BBtu of renewable energy. Thermal energy accounted for 73 percent of the total production. The top two renewable energy producing installations were Hill AFB followed by Nellis AFB. Figure 4-12 illustrates the Air Force's top renewable energy producing installations, and the map illustrates the production by state (darker blue shading representing higher production) in FY 2012.



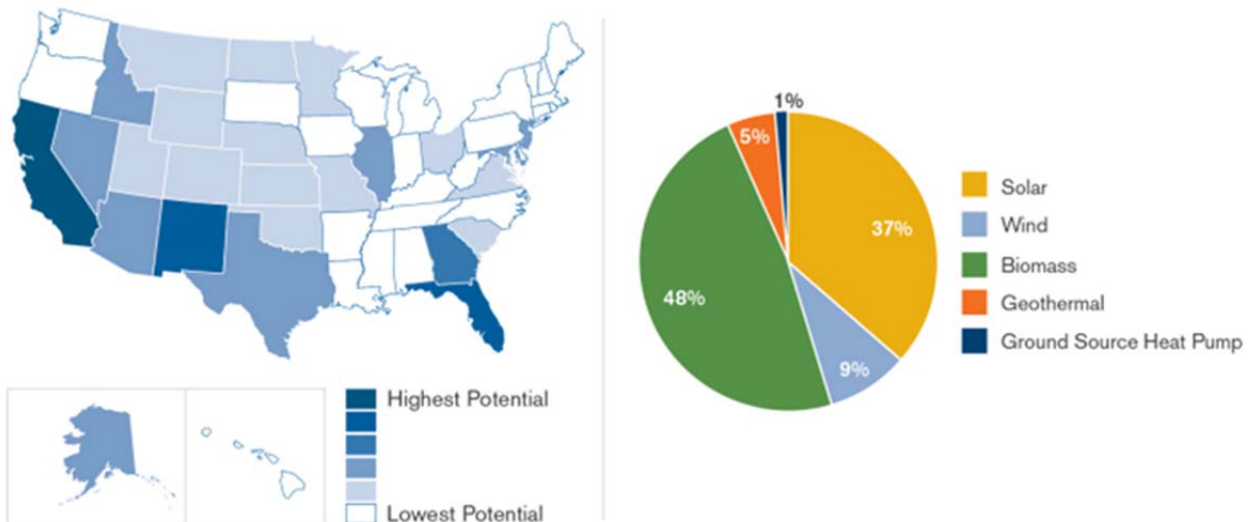
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Figure 4-12: Air Force FY 2012 Renewable Energy Production



The Air Force identified over 11,000 BBtu of potential renewable energy projects that could be developed on its installations, the majority of which could come from biomass projects. The map in Figure 4-13 illustrates the potential for renewable energy production by state, where the darker blue represents higher potential. The pie chart in Figure 4-13 represents the breakout of renewable energy potential by technology-type for the Air Force.

Figure 4-13: Air Force Renewable Energy Potential

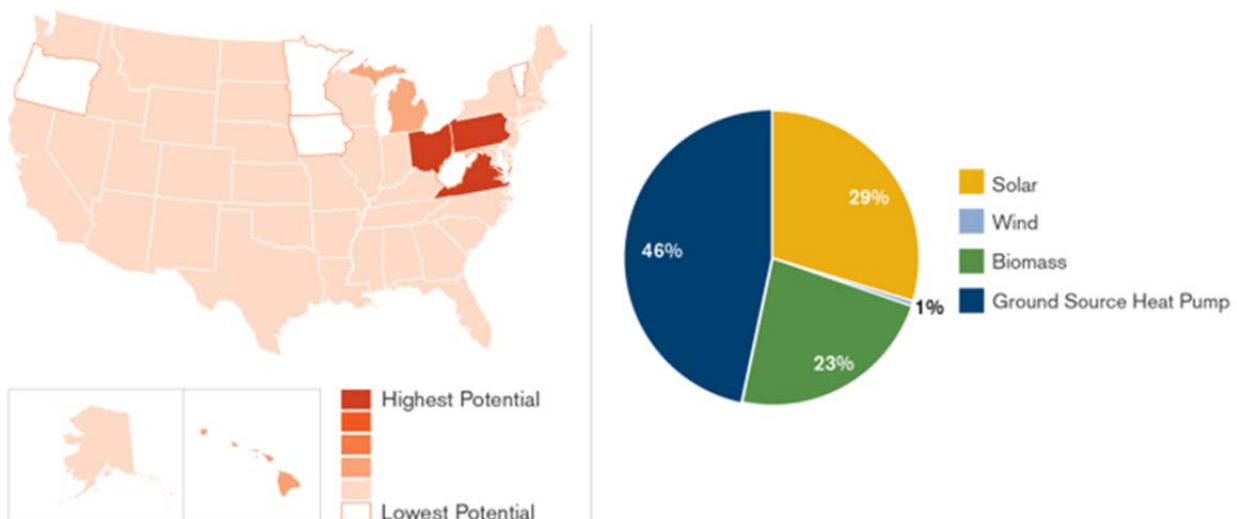




Defense Agencies

The Defense Agencies identified over 5,000 BBtu of potential renewable energy that could be developed across the portfolio of 288 installations on which they are located. Of the total renewable energy identified by the Defense Agencies, 92 percent was attributed to 10 DLA facilities. All the renewable energy potential identified across the 256 DeCA facilities was solar, contributing to 4 percent of the total renewable energy potential for the Defense Agencies. DIA¹⁴ contributed to 1 percent of the total renewable energy potential. The map in Figure 4-14 illustrates the Defense Agencies potential for renewable energy production by state where the darker orange represents higher potential. The pie chart in Figure 4-14 represents the breakout of the renewable energy potential by technology-type.

Figure 4-14: Defense Agencies Renewable Energy Potential



¹⁴ DIA was also the only Defense Agency that produced renewable energy, for a total of 7.5 BBtu.



Net Zero Energy Installation

In 2008, DOE and DoD, in collaboration with the FEMP and the National Renewable Energy Laboratory (NREL), established Net Zero Energy Installation (NZEI), a joint initiative to address military energy use. NZEI representatives created a task force to examine the potential for Net Zero energy military installations. The goal of the NZEI task force was to create a repeatable template for planning and developing Net Zero energy installations across the Military Services and facilitate major increases in deployed energy efficiency and renewable energy. The task force initially defined a NZEI as “a military installation that produces as much energy on or near the installation as it consumes in its buildings and facilities.”

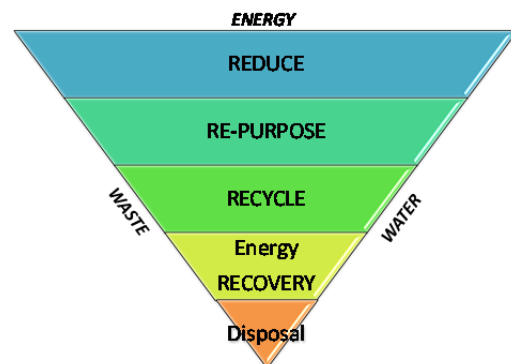
In principle, a Net Zero installation should reduce its load through energy efficiency (typically the most cost-effective measure that will allow the highest returns per dollar spent) and conservation (use only what is needed), then meet the remaining load through on-site renewable energy. The NZEI assessment template offers a systematic framework for the Military Services to analyze energy projects at installations while balancing other site priorities such as mission, cost, and security.

The Military Services adopted the assessment template and are now planning on executing many Net Zero initiatives at military installations through dedicated programs. While Net Zero is first and foremost aimed at matching supply with demand, it also makes installations more energy secure by reducing their dependence on the commercial power grid.

Army

For the Army, the goal of net zero efforts is to manage Army installations to become model sustainable communities. The efforts focus on energy, waste, and water streams, striving to operate as close to net zero as possible. The Army’s net zero approach includes five interrelated and integrated steps that capture the management of energy, water and waste to enhance the ecological productivity of land, water, and air (Figure 4-15). Reduction includes maximizing energy efficiency in existing facilities, implementing water conservation practices, and eliminating generation of unnecessary waste. Re-purpose involves diverting energy, water or waste to a secondary purpose with limited processes. Recycling or composting involves maximizing diversion of materials from the solid waste stream, development of closed-loop systems to reclaim water, or cogeneration where two forms of energy (heat and electricity) are created from one source. Energy recovery can occur from converting unusable waste to energy, renewable energy or geothermal water sources. Disposal is the final step and last resort after the last drop of water, the last bit of thermal energy and all other waste mitigation strategies have been fully exercised.

Figure 4-15: Army Net Zero Approach





Office of the Deputy Under Secretary of Defense (Installations and Environment)

Net Zero installations will produce as much energy on site as used, limit consumption of freshwater resources and return water back to the same watershed so as to not deplete groundwater and surface water, and/or reduce, reuse, and recover waste streams to minimize waste generation. To achieve net zero energy, these Army installations will implement aggressive conservation and efficiency efforts while benchmarking energy consumption to identify additional opportunities. The next step is to utilize or re-purpose waste from boiler stack exhaust, building exhaust, and other thermal streams for secondary purpose and co-generation to recover heat from electricity generation processes. When the most practical efficiencies are achieved, these installations will assess complementary renewable energy projects to meet the balance of energy needs.

DON

SECNAV set forth a goal for 50 percent of DON installations to be net zero by FY 2020.¹⁵ In FY 2012, two DON installations were net zero: NAWS China Lake, CA and NNSY Portsmouth, VA. To advance this goal beyond these two locations, the Navy and Marine Corps began working with NREL to better understand the mission, market, policy, and geographic conditions that will ultimately influence the economics of reaching the net zero goal. NREL performed a screening of renewable energy potential and this year began a detailed study of both renewable energy and net zero potential of DON installations that should be completed in 2013. Over the next several years, DON will seek industry solutions to employ renewable generation to the extent economically possible.

This net zero process adopted by DON will provide a valuable holistic approach to the renewable energy goals. Throughout FY 2013, DON will be applying a systematic methodology for identifying renewable energy opportunities at each installation. The process will include an examination of mission compatibility, land feasibility, and cost-effectiveness factors. As a result, DON expects to have a better understanding of the appropriate mix of renewable technologies for an installation to achieve net zero goal and attain the lowest life cycle cost of energy. This emphasis on the lowest life cycle cost of energy will expose potential options that could help DON reach its renewable energy targets. Furthermore, the process is being supported by site assessments already underway to validate assumptions and real-world factors that are critical for determining the true feasibility of potential opportunities.

¹⁵ SECNAV Instruction 4101.3 defines a Net Zero Installation as “an installation which, over the course of a fiscal year, matches or exceeds the electrical energy it consumes ashore with electrical energy generated from alternative or renewable energy sources.”



Office of the Deputy Under Secretary of Defense (Installations and Environment)

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5. Enhancing Energy Security

The Department must conduct its mission during disruptions to the nation's electrical grid, and it also provides support for humanitarian relief and emergency response efforts to civilian communities. DoD and its outlying communities are dependent on the commercial grid, which is vulnerable to

natural or man-made disruptions that have the potential to create short- or long-term power outages impacting military installations and the ability to sustain DoD missions.

Energy security is defined as “having assured access to reliable supplies of energy and the ability to protect and deliver sufficient energy to meet mission essential requirements.”

Title 10, U.S.C., Section 2924

DoD is pursuing a multi-pronged strategy to ensure that installations have resilient, reliable, redundant, and continuous power. First, two elements of the facility energy strategy are essential components to improving energy security: reducing the installation's demand for energy and expanding the supply of distributed (on-site) energy sources. Second, the Department is actively engaged with other Federal agencies, state and local governments, and key industrial players in addressing concerns to help remediate risk to DoD missions associated with power outages. Third, DoD directly pursues energy security initiatives that improve resiliency by providing more reliable, redundant, and continuous supplies of power.

The following sections describe the Department's activities directed at enhancing energy security in FY 2012. It describes the Department's ongoing energy security efforts and also responds to the Senate Armed Services Committee (SASC) Report 112-168. DoD conducted a detailed study with the Massachusetts Institute of Technology Lincoln Laboratory (MIT-LL) to respond directly to the first requirement in SASC Report 112-168. The responses to Requirements 2 and 3 are included throughout this energy security chapter of the FY 2012 AEMR.

SASC Report 112-168 Reporting Requirement

- (1) The status of microgrid demonstrations currently deployed domestically;
- (2) The Department's plan to secure energy supplied to military installations to meet mission essential requirements; and,
- (3) The potential benefits of the wide-spread use of secure microgrid technology on domestic military installations.

The FY 2012 NDAA also amended Title 10, Section 2925 in the AEMR reporting language by adding a requirement to report details of utility outages at military installations. The following discussion directly addresses this requirement.

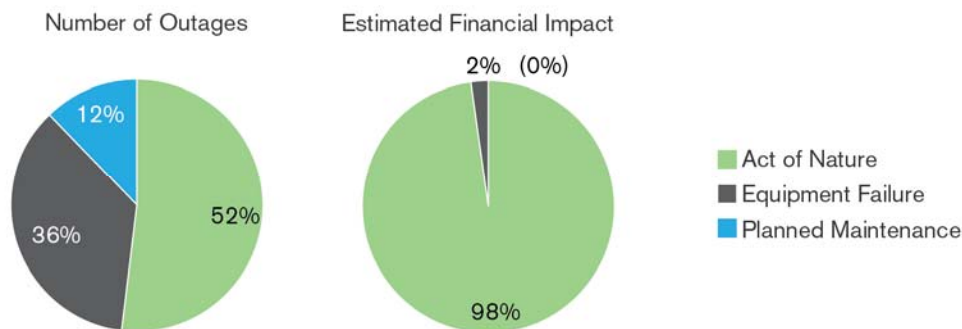
In FY 2012, DoD conducted a survey of utility outages on military installations that resulted from external, commercial utility interruption of its gas, water, and electric utilities. In FY 2012, DoD Components reported 87 utility outages that lasted 8 hours or longer. These outages were dispersed across the Department's installations both in the U.S. and overseas. The financial impact of these outages was estimated to be over \$7 million dollars. The mitigation steps associated with these outages



Office of the Deputy Under Secretary of Defense (Installations and Environment)

included increasing servicing efforts with the local utility, increasing on-site fuel supplies, pursuit of redundant power infrastructure, and implementation of plans to respond to future power outages. The power outages were caused by either acts of nature, equipment failure, or planned maintenance. No malicious acts were reported as causing power outages in FY 2012. Acts of nature caused over half of the utility outages but were responsible for 98 percent of the estimated financial impact to the Department (Figure 5-1).

Figure 5-1: FY 2012 Utility Outages



Addressing Concerns

Mitigating or remediating extended commercial power risk is clearly not something DoD can do acting alone. DoD continues to build upon its partnerships on energy security with other Federal departments, agencies, and the private sector. Central to these partnerships is creating a shared value proposition that supports investment and innovation to secure against a range of vulnerabilities and threats, including malicious and coordinated disruptions to electrical power that supplies installations, facilities, and activities.

The Energy Grid Security Executive Council (EGSEC) described in further in the next section, is a senior executive forum chartered to develop solutions that mitigate or remediate risk to DoD missions associated with power outages.

Energy Grid Security Executive Council

The EGSEC, co-chaired by the Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs (ASD(HD&ASA)) and the DUSD(I&E), continues to identify problem areas, recommend approaches to improve the security and reliability of electricity supplies, and strengthen the continuity of critical missions performed at military installations and Defense Industrial Base (DIB) facilities in the U.S.

The Council is overseeing the development and coordination of policies, strategies, plans, and initiatives through partnerships with other Federal departments, agencies, and the private sector. The EGSEC



Office of the Deputy Under Secretary of Defense (Installations and Environment)

works within established DoD processes and leverages existing energy initiatives mandated by statute, such as improving energy efficiency and deploying renewable energy sources, to the greatest extent possible.

Overview of Installation Energy Test Bed Efforts

The Environmental Security Technology Certification Program's (ESTCP's) Installation Energy Test Bed is a cost-effective way to demonstrate new energy technologies in a real-world, integrated building environment so as to reduce risk, overcome barriers to deployment, and facilitate wide-scale commercialization. Emerging technologies offer a way for DoD to reduce its facility energy demand by a dramatic amount and in a cost-effective manner, and to provide distributed generation and storage to improve energy security. The ESTCP Installation Energy Test Bed is an avenue that DoD will use to encourage new, energy efficient technologies that provide the best value to taxpayers while assessing life-cycle costs. DoD continues to use this program to demonstrate new technologies across its installations, and to address the reporting requirement in the House Committee on Appropriations on Military Construction and Veterans Affairs and Related Agencies Appropriation Bill for 2013, Report 112-194.

Projects include rigorous operational testing and assessment of the life-cycle costs of new technology while addressing DoD-unique issues. Following demonstrations, DoD can be a sophisticated first user of successful cutting-edge, transformational energy technologies. The Installation Energy Test Bed has funded 10 microgrid and advanced installation energy management technology demonstrations and is initiating 7 new demonstration projects in FY 2013 to evaluate the benefits and risks of various approaches and configurations. Through a competitive selection process, the Installation Energy Test Bed has undertaken projects with multiple vendors to ensure that the Department can capture the benefits of diverse approaches. Demonstrations are underway at Fort Bliss, Texas (Lockheed Martin); Twentynine Palms, California (General Electric's advanced microgrid system); Los Angeles AFB (Lawrence Berkeley National Laboratory); and several other installations. More information on the ESTCP is available at <http://www.serdp.org/>.

Fort Bliss, Texas

An integrated system of energy assets under central microgrid control can provide power that is cost-effective, cleaner, and more secure than traditional operations. This project is demonstrating such an intelligent microgrid tied to the existing energy assets at a U.S. Army Brigade Combat Team complex at Fort Bliss, Texas. An important aspect of the project is demonstrating both grid-tied and grid-independent operation, providing additional power in times of high energy demand and exhibiting the system's ability to maintain power to critical operations in the event of losing a major power source. It will also test the ability of the microgrid technology to supply peak power and reduce greenhouse gas emissions and overall energy consumption. Planning tools allow power engineers to design a microgrid, determining the optimal arrangement and control of the distributed energy assets and loads. Controllers at each piece of equipment react automatically to ensure power delivery, quality, and safety.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Optimization algorithms set points to operate each piece of equipment for energy efficiency and security. This demonstration will help pave the way for the implementation of this technology at a wider range of DoD facilities.

Marine Corps Air Ground Combat Center (Twentynine Palms, California)

DoD is transforming the electrical infrastructure of Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, California, the nation's largest Marine Corps Base, to enable it to operate off the commercial power grid when needed. The remote base in the Mojave Desert serves a population of more than 27,000 military and civilian personnel who facilitate large-scale training and exercises. The

austere conditions, limited infrastructure, and required continuity of operations place a heavy demand on the base's electrical infrastructure. The base sustains its mission with more than 10 MW of



2 MW Solar PV Farm



1 MW PV Shading



7.2 MW Cogeneration Plant

power generated on-site by a 1.2 MW solar PV farm, 1 MW of solar PV shading, a 0.5 MW fuel cell, and a 7.2 MW co-generation plant. The base is tying together its disparate electrical infrastructure in an optimal way while serving as a test bed for new technologies. The centerpiece of this electrical infrastructure integration demonstrates how microgrids will serve as an important component of the smart grid.

In an initial demonstration, a central control system will enable facility managers to adjust the demand for electricity from buildings and substations, while dropping demand from warehouses and temporary trailers, to optimize the local system. A second phase will measure and improve the quality of the electricity flowing across the microgrid. A third phase will integrate a Sodium-Metal-Halide Battery, which can function in the extreme desert climate of Twentynine Palms, to help alleviate renewable energy intermittency, improve island-mode operations if the main grid goes down, reduce expensive "demand charges" and reduce stress on the main transformers and other electrical equipment on base.

Los Angeles Air Force Base

A demonstration just getting underway at Los Angeles AFB is focused on showing the cost-effective use of DoD resources in the evolving electrical power market place, in addition to the energy security benefits of microgrids. This demonstration centers around medium duty, plug-in, electric vehicles. The fast-responding energy storage capability of vehicle batteries can provide power to help satisfy building, local base, and wider grid services. Although vehicles individually are not large electricity loads or sources, when aggregated they can become a controlled entity able to offset the effects of variable local resources and loads. Vehicle charging can be costly if not managed well in relation to the prevailing

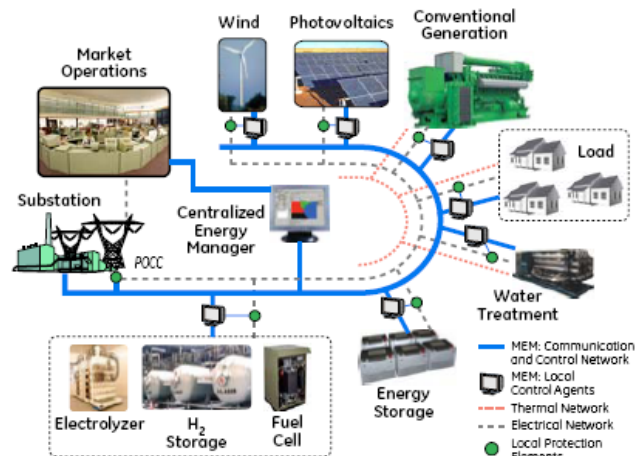


utility tariff. The vehicle-to-grid technology involves optimizing charging times, enabling vehicle-to-grid integration and partnering with the local utilities provider to exploit new ancillary service markets. This model has the potential to reduce the incremental cost of electric vehicles, in addition to providing the energy security benefits of vehicle-to-grid operation.

Next Generation Microgrids

Smart microgrids and energy storage offer a more robust and cost-effective approach to ensuring installation energy security than the traditional approach of backup generators tied to single critical loads and (limited) supplies of on-site fuel. Although microgrid systems are in use today, they are relatively unsophisticated, with limited ability to integrate renewable and other distributed energy sources, little or no energy storage capability, uncontrolled load demands, and “dumb” distribution that is not optimized.

Advanced microgrids reduce installation energy costs on a day-to-day basis by allowing for load balancing and demand response, as well as offering DoD a pathway to participate in ancillary service markets, all of which can make holistic energy management more cost-effective. They also facilitate the incorporation of renewable and other on-site energy generation. More importantly, they offer energy security: the combination of on-site energy and storage, together with the microgrid’s ability to manage local energy supply and demand, allow installations to operate in “islanded” mode, shedding non-essential loads and maintaining mission-critical loads if the electrical grid is disrupted (Figure 5-1).



- Point of Common Coupling (POCC) to the grid
- System coordination and optimization for asset utilization (electrical and thermal)
- Grid-connected and/or island operation to increase availability
- Achieve benefits to utility and end-user

Source: GE Global Research, *Bringing the Smart Grid to Military Bases* [online source] (accessed July 1, 2012), available on the Internet at <http://ge.geglobalresearch.com/blog/bringing-the-smart-grid-to-military-bases/>

Microgrid Study

DUSD(I&E) commissioned outside experts to develop a study addressing microgrids on DoD installations. First, MIT-LL developed a complete technical review of the Department’s work on microgrids. This work classified different microgrid architectures and characteristics and compared their relative cost-effectiveness. This study assesses the total investment made into DoD microgrid and smart grid activities, including total value, location, duration of project, and a transition plan. The study provides insight into increasing energy security and reducing energy costs through the incorporation of



Office of the Deputy Under Secretary of Defense (Installations and Environment)

renewable energy resources into microgrids, as well as new market opportunities for DoD in the area of demand response and ancillary services.

The study highlights the extent of ongoing microgrid work across DoD. It identified 44 installations that either had existing microgrids, planned installation of microgrids, or conducted microgrid studies or demonstrations at their facilities.

The authors interviewed more than 75 people from the Military Services, the Office of the Secretary of Defense, and the DOE. The analysis categorized the ongoing microgrid efforts based on several key attributes including size, maturity, the inclusion of renewable resources, and the ability to operate in a grid-tied manner.



Photo Source: MIT Lincoln Laboratory, Lexington, MA.
Available from <http://www.ll.mit.edu/>

MIT Lincoln Lab

The analysis confirms the value of microgrids to DoD. The combination of on-site energy generation and storage, together with the microgrid's ability to manage local energy supply and demand, allow installations to shed non-essential loads and maintain mission-critical loads if the electrical grid is disrupted.

The study illustrates the largely untapped potential of moving to smarter, next generation microgrids that would accommodate far greater penetration of renewable energy sources, as well as tighter integration with the electrical grid. If solar resources that are increasingly being installed on DoD installations were available during islanded operation of a microgrid, they could significantly extend the islanding time. Moreover, a microgrid that could operate when tied to the grid would offer new opportunities for DoD to generate cost savings by using backup generation assets during normal operation and generate financial revenue by using advanced ancillary services.

One important finding is that there will be no "one size fits all" solution. The location of a military installation influences the options available for energy generation sources, the options available for interaction with the local utility, the characteristics of the local electricity market, and the regulatory environment. The most effective microgrids will be those that take into account the needs of the local commercial electrical grid and are configured so that they can earn value helping to meet those needs.

The complete study is available at the ESTCP website: <http://www.serdp.org/News-and-Events/News-Announcements/Program-News/DoD-study-finds-microgrids-offer-improved-energy-security-for-DoD-installations>.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Smart Power Infrastructure Demonstration For Energy Reliability and Security (SPIDERS)

U.S. Pacific Command and U.S. Northern Command are co-sponsoring the SPIDERS Joint Capability Technology Demonstration (JCTD), a three-phase comprehensive demonstration of a cyber-secure microgrid architecture in partnership with DOE and DHS. The demonstration's purpose is to gather operational data on the protection of cyber-secure smart microgrids with demand side management and integration of renewable energy and energy storage on military installations for enhanced mission assurance during prolonged outages of commercial power. The demonstration focuses on the integration of cyber-secure industrial control systems; application of Smart Grid technologies; distributed and variable renewable generation and energy storage; and redundant, distributed traditional back-up power generation. The results of the demonstration will help inform infrastructure investment decisions to reduce the mission risk of extended electrical power outages at military installations, enhancing mission assurance for DoD units and assisting local civilian communities in disaster recovery efforts.

Phase 1, at Joint Base Pearl Harbor-Hickam, Hawaii, installed a new digitally controlled 800kW diesel generator, advanced uninterruptible power supply (UPS), and software and controls to create a microgrid to allow integration of the PV array with multiple diesel generators. This ensured consistent electrical power delivery to the waste water treatment facility, a simulated complex mission critical load.

A technical demonstration conducted in December 2012 exceeded all expectations by demonstrating the capability to "push" in excess of 1 MW to the commercial electric grid; synchronize multiple generators effectively; incorporate more than a 90 percent penetration of renewable generation; complete a "black start" emergency utility failure simulation; and withstand Joint Information Operations Warfare Center (JIOWC) Red Team and Sandia Red Team cyber attacks. Additionally, the microgrid operation had a 30 percent diesel fuel savings during the 72 hour operational demonstration held in January 2013.

These initial results provide proof-of-concept that the SPIDERS microgrid will satisfy both U.S. Pacific Command and U.S. Northern Command requirements to sustain critical operations during prolonged power outages; protect task critical assets from loss of power due to cyber attack; integrate renewables and other distributed energy generation sources to power critical assets in times of emergencies; and manage installation electrical power and consumption efficiency to reduce petroleum demand, carbon footprint, and cost.

Phase 2 at Fort Carson, Colorado, is in the initial stages of construction. The technical demonstration is scheduled for August of 2013, followed by the operational utility assessment in October of 2013. The design includes multiple circuits, a high penetration percentage of renewable energy generation, bi-directional electric vehicle-to-grid energy management, and cyber-secure controls that would enable



Office of the Deputy Under Secretary of Defense (Installations and Environment)

multiple mission loads to extend endurance and reliability consistent with Fort Carson's command priorities.

Phase 3 at Camp Smith, Hawaii, is planned to be the first completely "always on, always sensing", "islandable" and cyber-secure DoD military microgrid. The array of infrastructure assets, office buildings, housing units, solar energy generation, energy storage, and distributed emergency generators will enhance mission assurance, energy security, and potential economic benefit in collaboration with the local utility.

Industrial Control Systems

Power generation providers rely on Industrial Control Systems (ICS), a key element of Supervisory Control and Data Acquisition (SCADA) systems, to control and operate the electric power grid. ICS are physical equipment-oriented technologies and systems that deal with operating plants and equipment, including devices that ensure physical system integrity and meet technical constraints. These systems are event-driven and frequently real-time software applications or devices with embedded software applications. ICS range from non-critical systems such as those used for typical building controls (e.g., utility meters, HVAC, elevators, lighting) to those more indispensable such as critical infrastructure and installation mission dependent energy systems.

Control networks, used by commercial entities and DoD, connected to ICS are vulnerable and potentially at risk of cyber intrusion or attack. Historically, they were physically isolated from outside networks and based on proprietary hardware, software, and communication protocols and lacked the secure communication capabilities required in today's interconnected systems. DoD installations and the commercial ICS community, in collaboration with National Institute of Standards and Technology, DHS, and DOE, continue to develop cyber secure architecture designs, mitigation options, patch deployment strategies, and information technology security measure upgrades. DoD continues to investigate relevant cyber secure methods while using industry standards to protect its energy infrastructure and reliable energy sources from risks associated with peace-time and war scenario cyber threats.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Service Initiatives

Army

The Army continues working diligently to improve the energy security posture of its installations and facilities through enhanced energy efficiency, improved grid infrastructure, and development of on-site power generation. The Army now includes energy security in its Campaign Plan as part of a dedicated program to change an energy informed culture, increasing the command attention given to energy security. Additionally, in support of enterprise mission assurance implementation, the Deputy Assistant Secretary of the Army (Energy and Sustainability) works closely with the Deputy Chief of Staff, G-3/5/7 (G-34 Army Protection Directorate) to ensure resource investment decisions are risk-based and reflect operational priorities.

This is the first time that the Army has included energy security and sustainability as campaign objectives in the Army Campaign Plan to clearly address energy security as an enterprise strategic approach that our Soldiers, whether garrisoned at installations or forward operating bases, are assured access to reliable supplies of energy and water, as well as the ability to protect and deliver sufficient energy and water to meet mission essential requirements. Core metrics on energy security and sustainability were developed that best measure performance relative to the following major objectives:

- Adopt and execute installation energy security and sustainability strategies;
- Achieve energy-informed operations;
- Enhance water security; and,
- Integrate and advance sustainability across the entire lifecycle of the civil works portfolio.

For the Army, the first step to improve energy security is to reduce total energy demand. To achieve energy reductions, the Army instituted several policies seeking to improve efficiency including making the Army's building standards the highest in the Federal government. The Army makes significant investments in energy security each year.

The Army also has multiple Net Zero pilot installations to pioneer an innovative holistic approach to design and manage resources across an installation. An overview of the Army's Net Zero initiatives is provided in the renewable energy section of this AEMR.

The Army is making investments required to develop and acquire microgrid technologies for use at fixed installations and in contingency operations. For example, the SPIDERS program will build a microgrid at Fort Carson, Colorado. Other microgrid projects are being developed at Fort Bliss, Texas; Fort Sill, Oklahoma; and Fort Hunter-Liggett, California, among others.

The Army is developing base load power production on its installations. The trend in the past decade was to significantly reduce, or altogether eliminate, military power production. The Army established



Office of the Deputy Under Secretary of Defense (Installations and Environment)

the EITF to streamline the process of developing large-scale renewable energy projects on Army installations. A consideration in all of these projects is the contribution made to installation energy security. Over 150 MW of capacity is currently under development, which will provide power to meet Army energy needs and provide energy security for its installations. More information on EITF efforts is available on the Army's website at: <http://www.armyeitf.com/>.

Finally, a key external supporting initiative of energy security is the Army Cyber Command's effort to improve the cyber security of ICS the Service owns or upon which it depends. The program follows four lines of effort that focus on: 1) identification of the various systems throughout the Army; 2) integration of ICS cyber security into existing critical infrastructure risk management programs; 3) gap analysis of capabilities and capacity; and 4) collaboration with the ICS community of interest. The Army has already started integrating ICS cyber security concerns into several of its assessment programs and will expand the program in the coming fiscal year.

DON

The Navy energy vision identifies ends, ways, and means for increasing energy security. The Navy increases shore energy security by decreasing overall energy consumption, increasing the energy efficiency of shore systems, increasing the use of viable alternative energy sources, and increasing the reliability of energy for critical assets. Additionally, the Navy mitigates vulnerabilities related to the electrical grid, including outages from natural disaster, accident, and physical and cyber-attack in partnership with local utility providers.

The Navy values energy as a strategic resource, with its security being fundamental to execute missions both afloat and ashore. To this end, the Navy implements detailed program plans, studies, initiatives, and pilot projects to define, demonstrate, and address energy policy and energy security.

The Navy instituted an enterprise-wide energy management program in FY 2012 to provide necessary oversight of the shore energy program and to address risks to critical assets and mission-critical utility infrastructure. The Energy Security Program Plan defines the means, methods, and schedules to assess risks, refine solutions, develop recommendations, and identify program funding for risk mitigation projects at facility, pier, and adjacent municipal support activities for Navy critical electrical and utility infrastructures. Naval Surface Warfare Center's Mission Assurance Division (MAD), in cooperation with the Naval Facilities Engineering Command Engineering and Expeditionary Warfare Center, leads assessment and solutions development efforts under the Energy Security Audit Program to provide recommendations for project development.

DON is exploring the possibility of grouping Navy and Marine Corps installations geographically into regional smart grids capable of mutually supporting mission-critical resources for emergencies or extended power outages. The goal is to pursue ways to enhance mission assurance and energy security



Office of the Deputy Under Secretary of Defense (Installations and Environment)

with an additional goal of reducing costs where possible. The pilot project includes San Diego area Navy and Marine Corps installations. Navy will use findings from the pilot to validate the concept and then, if warranted, export it to other installation concentration areas. Further investments in renewable generation, back-up generation (preferably powered with biofuel), and storage technologies will be considered. Where applicable, the Navy will consider alternative financing and other innovative solutions as appropriate to minimize direct Navy investment.

The Navy continues making progress to incorporate new technologies and renewable energy pilot programs. The smart grid pilot project at Naval District Washington (NDW) will allow NDW to collect, transport, and synthesize installation energy consumption and load demand information. NDW is developing a concept of operations for the smart grid including business analytics, energy consumption reduction opportunities, information assurance requirements, optimization of facilities management operations, and demand response/load management. Lessons learned from this pilot will be used to program an enterprise-wide approach for increased command and control of energy management systems to provide increased utility monitoring and demand response/reduction.

The Marine Corps completed and awarded a number of renewable generation projects in the last year. A landfill gas powered generation plant PPA began operation in June 2012 and produces 3.0 megawatts (MW) of electricity supporting the Marine Corps Air Station (MCAS) Miramar, California. Another PPA was awarded last year at the Marine Corps Logistics Base (MCLB) Barstow, California, to provide approximately 1.5MW of solar PV generation. MCAGCC Twentynine Palms, California, continues to host a key installation energy test bed project.

In the past year, NREL performed a screening of renewable energy potential, and this year began a detailed study of both renewable energy and Net Zero potential of Marine Corps bases that should be completed by late Summer of 2013. Over the next several years, the Marine Corps will seek industry solutions, with support from Naval Facilities Engineering Command, to employ renewable generation on Marine Corps bases to the extent economically possible.

Air Force

To mitigate energy security vulnerabilities introduced by connecting renewable energy systems to the electrical grid, the Air Force is implementing rigorous design requirements and project reviews compliant with the new Institute of Electrical and Electronic Engineers guide for design, operation, and integration of distributed resource island systems with electric power systems. This effort will significantly reduce the risks of inadvertent grid shutdown, poor power quality, and system control hijacking by cyber attack.

The Air Force continues to assess electrical system vulnerabilities and back-up power gaps for mission assurance through comprehensive energy security checklists. During FY 2012 vulnerability assessments, the Air Force assessed installation plans to effectively, efficiently, and economically mitigate hazards



Office of the Deputy Under Secretary of Defense (Installations and Environment)

impacting power interruptions, while ensuring written contingency plans and procedures for power outages are well coordinated with local utility providers. Additionally, the Air Force published Engineering Technical Letter 11-21 (Change 2), March 2012, Emergency & Standby Generator Design, Maintenance, and Testing Criteria, to ensure on-site back-up power is adequately sized and maintained, and includes fuel storage and resupply plans for back-up generators.



6. Data Management and Metering

As DoD continues to improve its energy efficiency, accurate, real-time facility energy data is essential to provide a basis for effective enterprise and installation energy management. However, most DoD buildings are not metered, limiting our ability to systematically track, analyze, and benchmark facility energy and water use in a way that can inform Department energy investment decision-making.

In April 2013, DUSD(I&E) issued an updated policy on the metering of DoD facilities. In addition to increasing the amount of energy that must be captured on building-level meters, the policy will help ensure that installed meters can automatically and securely deliver data to energy professionals in the field and at all levels of the Department. In addition, meters that meet the requirements of this policy will enable the implementation of the Enterprise Energy Information Management (EEIM) capability.

Progress Toward Energy Metering Goals

The NECPA (as modified by EPCA 2005 Section 103 and EISA 2007 Section 434(b)) requires Federal agencies to install electricity meters on all Federal buildings by FY 2012, and the same level of natural gas and steam meters installed by FY 2016, with advanced meters installed to the maximum extent practicable. DoD Instruction (DoDI) 4170.11 expands on this, requiring that electricity, natural gas, and water meters be installed on all appropriate¹⁶ facilities by FY 2012. The DoDI also requires the installation of meters in conjunction with all Military Construction (MILCON), major renovation, and ESPC projects.

In FY 2012, DoD had metered 83 percent of Component-defined appropriate buildings for electricity, falling short of the 100 percent goal. The Department installed natural gas meters in 69 percent of appropriate buildings. The Department installed water and steam meters in 56 percent of appropriate buildings. These numbers are based on the Services' independent analyses of cost-effectiveness of meter installation. Table 6-1 summarizes DoD's metering progress in FY 2012 for electricity, water, steam, and natural gas.

¹⁶ Appropriate facilities are those for which the DoD Component has determined metering would be cost-effective and practical. Cost practicality is determined by each individual Service or Defense Agency.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Table 6-1: FY 2012 DoD Metering Progress

Utility	Standard Meters			Advanced Meters			Total % Appropriate Buildings Metered
	Total Number of Metered Buildings	% of Appropriate Buildings	Total Number of Meters	Total Number of Metered Buildings	% of Appropriate Buildings	Total Number of Meters	
Electricity	8,854	24%	9,821	20,984	58%	29,155	83%
Water	7,227	37%	7,204	3,772	19%	5,807	56%
Steam	737	41%	415	281	16%	526	56%
Natural Gas	2,709	24%	1,973	5,005	45%	7,297	69%

In FY 2012, DoD captured approximately 54 percent of electricity consumption, 35 percent of natural gas consumption, 21 percent water consumption, and 47 percent of steam consumption on installed meters (Table 6-2).

Table 6-2: FY 2012 DoD Utility Quantity Metered

Utility	Units	Standard Meters		Advanced Meters		Total % utility Metered
		Utility Quantity Metered	% Total Consumption	Utility Quantity Metered	% Total Consumption	
Electricity	<i>BBTU</i>	11,649	13%	38,066	41%	54%
Water	<i>Thousand Gallons</i>	8,152,724	9%	11,373,095	12%	21%
Steam	<i>BBTU</i>	1,708	29%	1,093	18%	47%
Natural Gas	<i>BBTU</i>	6,518	11%	14,992	24%	35%

In FY 2012, less than a quarter of advanced meters reported to an advanced metering system (AMS). Table 6-3 summarizes the number of advanced meters that report to an AMS by commodity.

Table 6-3: FY 2012 Advanced Metering System Reporting

Utility	Units	Consumption Reported to Advanced Metering System	% Total Consumption	Number of Meters Reporting to Advanced Metering System	% of Advanced Meters Reporting to Advanced Metering System
Electricity	<i>BBTU</i>	11,407	12%	5,197	18%
Water	<i>Thousand Gallons</i>	2,228,848	2%	401	7%
Steam	<i>BBTU</i>	0	0%	11	2%
Natural Gas	<i>BBTU</i>	2,360	4%	878	12%



Initiatives to Improve Facility Energy Monitoring

DUSD(I&E) has been leading the development of an EEIM capability that will facilitate the automated collection and analysis of standardized facility energy data. Automation will reduce the time it takes for energy managers to input and analyze data manually, and standardization will allow for data to be aggregated and analyzed on a Service-wide and Department-wide basis. EEIM will also provide advanced analytical tools to enable energy professionals at all levels of the Department to improve

their existing operations and identify cost-effective investments. The Components will continue to use their individual energy information management systems, modifying them to incorporate EEIM data elements and data standards, allowing the EEIM central capability to consolidate Component-specific information into a Department-wide enterprise system.

Enterprise Energy Information Management (EEIM)

The EEIM is an integration of capabilities across all DoD Components to give energy professionals at all levels of the DoD enterprise the right data, dashboards, and advanced analytical tools to make informed and intelligent investment decisions. When implemented, EEIM will leverage a wide net of data sources, including advanced utility meters, to facilitate automated collection and consolidation of standardized facility energy, cost, and project data, eliminating manual and dual data entry. DoD Components are developing implementation plans for incorporating EEIM business rules and common data language into their energy and project systems of record (SORs), which will allow automated communication between the SORs and the centrally hosted data warehouse.

Army

In FY 2011, the Army executed a program management initiative—the Army Central Meter Program—to meter energy and water consumption and incorporate the data into a centralized advanced metering system, Meter Data Management System (MDMS). The program establishes a meter standard to ensure all advanced meters are appropriately accredited. The Army issued an Army Meter Program Implementation Plan for the implementation of advanced electric, water, gas, and steam meters that should result in the direct measurement of 65 percent of the total energy consumed by Army facilities. The Army also issued a direction to implement the MDMS which is a secure, accredited energy information management system for the collection, analysis, and display of energy and real property facility data. Additionally, the Army is implementing advanced metering initiatives at several bases to include connection to robust energy monitoring and control systems. Table 6-4 summarizes the Army's FY 2012 metering profile.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Table 6-4: FY 2012 Army Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting AMS	% of Meters Reporting to AMS	Consumption Reported to AMS	% of Total Consumption
Electricity	BBtu	6,222	67%	14,080	43%	10,001	1,273	13%	1,792	5%
Water	Thousand Gallons	132	3%	110,000	0%	2,004	60	3%	3,293	0%
Steam	BBtu	7	3%	108	4%	305	0	0%	0	0%
Natural Gas	BBtu	1,395	35%	5,650	25%	3,179	222	7%	395	2%

DON

The Navy is rolling out an advanced metering infrastructure (AMI) system to capture an estimated 95 percent of the electrical consumption and 75 percent of the mechanical (natural gas, steam and water) consumption at installations worldwide. Additionally, the Navy is developing enterprise-wide software and integrated metering systems to collect and pay utility invoices, allocate consumption and bills to tenants, and incorporate metered data in a centralized and accessible database. The system, called CIRCUITS, enables energy managers to oversee the review of utilities allocation, consumption and cost data at a facility level. This will allow management to make more informed energy decisions using real data. Further, the Navy has also recognized the importance of capturing energy consumed at the waterfront in support of the Navy fleet and is now integrating these areas into AMI deployment. The Navy's Smart Grid Pilot Project at NDW is underway and will inform the development and rollout of a Shore Enterprise-wide Smart Grid in future years. Table 6-5 summarizes the Navy's FY 2012 metering profile, and Table 6-6 summarized the Marine Corps' FY 2012 metering profile.

Table 6-5: FY 2012 Navy Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting AMS	% of Meters Reporting to AMS	Consumption Reported to AMS	% of Total Consumption
Electricity	BBtu	5,627	38%	3,967	21%	6,778	70	1%	0	0%
Water	Thousand Gallons	2,035	18%	2,010,902	8%	2,048	0	0%	0	0%
Steam	BBtu	257	17%	393	21%	196	0	0%	0	0%
Natural Gas	BBtu	1,073	30%	2,710	18%	1,140	0	0%	0	0%



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Table 6-6: FY 2012 Marine Corps Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting AMS	% of Meters Reporting to AMS	Consumption Reported to AMS	% of Total Consumption
Electricity	BBTU	3,340	71%	3,320	62%	3,408	0	0%	0	0%
Water	Thousand Gallons	870	54%	2,930,635	41%	870	0	0%	0	0%
Steam	BBTU	0	0%	0	0%	0	0	0%	0	0%
Natural Gas	BBTU	904	69%	1,373	45%	904	0	0%	0	0%

Air Force

In FY 2012, the Air Force awarded a contract to install Advanced Meter Reading Systems (AMRS) at 80 installations. AMRS provides an enterprise-wide standardized solution for reporting electricity, water, steam, and natural gas consumption. Meter reading, dashboards, and reports are available for each installation on a stand-alone system and in the future will provide a data set to future service-wide platforms such as NexGen IT. Table 6-7 summarizes the Air Force's FY 2012 metering profile.

Table 6-7: FY 2012 Air Force Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting AMS	% of Meters Reporting to AMS	Consumption Reported to AMS	% of Total Consumption
Electricity	BBtu	5,588	85%	14,331	52%	8,620	3,640	42%	7,329	26%
Water	Thousand Gallons	646	56%	5,995,874	24%	746	259	35%	1,938,075	8%
Steam	BBtu	13	45%	592	56%	20	7	35%	0	0%
Natural Gas	BBtu	1,593	79%	5,174	27%	2,035	636	31%	1,848	10%

Defense Agencies

The Defense Agencies continue to enhance metering data management. Table 6-8 summarizes the Defense Agencies FY 2012 metering profile. Examples of initiatives to promote metering include:

- WHS awarded a Pentagon Reservation building-level metering contract in FY 2011 and plans to install building-level meters at all applicable buildings during FY 2013 and FY 2014. The Pentagon renovation installed several hundred energy submeters within the individual wedges of the Pentagon. These meters will allow WHS to monitor the energy consumption of various loads (e.g., chilled water, plug loads, lighting) for four wedges. Once the building metering initiative is complete, WHS will implement a second phase of the project to install additional sub-meters at



Office of the Deputy Under Secretary of Defense (Installations and Environment)

energy intense areas (e.g., data centers), allowing for more targeted energy conservation efforts.

- NSA has implemented an aggressive program to monitor electrical usage through its SCADA system. Hundreds of meters per year are being added to both Government-owned and leased facilities at a number of locations within the United States. These meters monitor mission-critical and high equipment concentration.
- DLA completed smart meter installations at two sites, capturing electricity, natural gas, oil, steam, and water use in all appropriate buildings. DLA is finalizing smart meter installations and connection to the DLA network at two additional sites in FY 2013.
- NRO has installed more than 300 power monitors and over 40 advanced meters capable of interval energy and power quality reporting at one site. Upgraded energy monitoring programs and additional building-level metering will be installed during FY 2013.
- DeCA revised its metering plan to coordinate additional metering and advanced metering with individual host installations and collect real-time data for energy monitoring and analysis purposes.
- DIA installed standard meters to measure electricity, natural gas and water consumption on all its energy intensity reduction goal-subject buildings. Goal-subject buildings in which DIA pays the bill directly to the local utility, indirectly through an Installation Service Agreement (ISA), or separately as a utility charge on leased buildings.

Table 6-8: FY 2012 Defense Agencies Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting AMS	% of Meters Reporting to AMS	Consumption Reported to AMS	% of Total Consumption
Electricity	BBtu	207	36%	2,368	34%	371	214	30%	2,286	33%
Water	Thousand Gallons	89	20%	325,684	23%	152	82	19%	287,480	20%
Steam	BBtu	4	10%	0	0%	5	4	15%	0	0%
Natural Gas	BBu	40	13%	85	5%	39	20	7%	117	7%



7. Funding Energy Projects

The Department continues to invest in energy and water conservation measures, as well as renewable energy projects using both appropriations and non-Governmental third-party financing. Appendix H contains the FY 2012 list of appropriated and non-Governmental third-party funded projects.

Energy Projects Funded by Appropriations

Appropriations are direct funding authorities through MILCON; Sustainment, Restoration, and Modernization (SRM); Operation and Maintenance (O&M); and Defense Working Capital Fund (DWCF) accounts. For example, the Energy Conservation Investment Program (ECIP) is a MILCON program, centrally managed by the Office of the Secretary of Defense to fund projects that save energy or reduce defense energy costs. ECIP supports new construction of efficient energy systems and improves and modernizes existing energy systems.

Congressional appropriations amounting to just under \$1 billion funded 1,436 energy efficiency, renewable energy, and water conservation projects in FY 2012 (Figure 7-1).

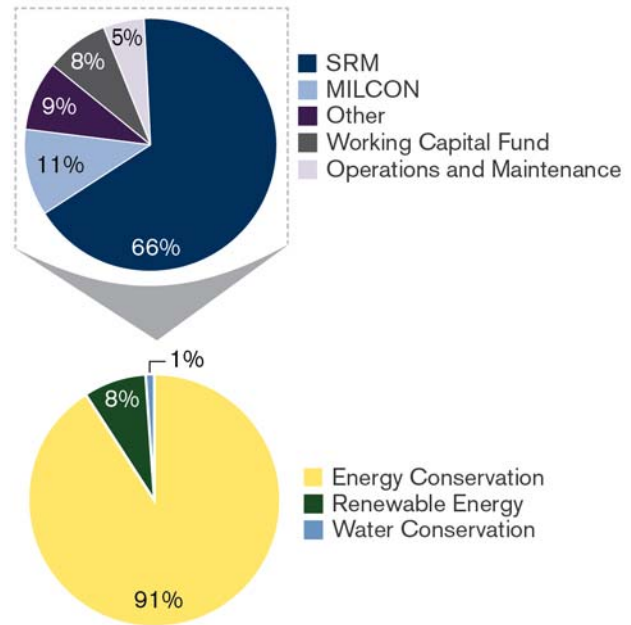


Figure 7-1: FY 2012 DoD Projects Funded by Appropriations, by Investment Amount



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Table 7-1 summarizes projects funded with FY 2012 appropriations by type and includes aggregate estimates of total project costs as well as the total number of funded projects.

Table 7-1: FY 2012 DoD Appropriations¹⁷

Project Type	Estimated Financial Obligation (\$000s)	Number of Projects
Energy Conservation	\$907,321	1,339
Renewable Energy	\$80,528	80
Water Conservation	\$10,259	13
Total	\$998,108	1,432

Funding Mechanism	Definition
1. Military Construction (MILCON) including the Energy Conservation Investment Program (ECIP)	MILCON, ECIP, O&M, and DWCF are appropriations that finance energy projects at DoD facilities. These are direct funding authorities through appropriated accounts. ECIP is a subset of the defense-wide MILCON program, specifically designated for projects that save energy or reduce defense energy costs. ECIP supports construction of new high efficiency energy systems and the improvement and modernization of existing systems.
2. Operation and Maintenance (O&M)	
3. Defense Working Capital Fund (DWCF)	

Army

In FY 2012, the Army spent \$113 million in appropriated funds to fund 329 energy conservation and renewable energy projects. These projects included lighting retrofits, HVAC replacements, and installation of energy management control system in buildings. Table 7-2 summarizes the breakdown of appropriated projects and associated funding for the Army. Energy efficiency and conservation initiatives overwhelmingly dominate the project mix, as shown in Figure 7-2.

Table 7-2: FY 2012 Army Appropriations

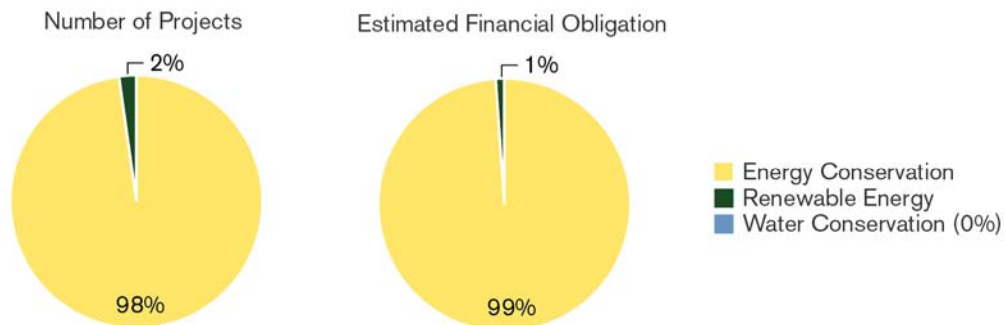
Project Type	Estimated Financial Obligation (\$000)	Number of Projects
Energy Conservation	\$111,796	321
Renewable Energy	\$1,531	8
Total	\$113,327	329

¹⁷ Totals include Defense Agencies.



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Figure 7-2: FY 2012 Army Projects Funded by Appropriations



DON

In FY 2012, DON awarded \$623 million in appropriated funds for 650 energy efficiency and renewable energy projects. These projects included decentralizing steam plants, lighting and HVAC replacements, and retrocommissioning buildings. Table 7-3 summarizes the breakdown of appropriated projects and associated funding between the Navy and the Marine Corps.

Table 7-3: FY 2012 DON Appropriations

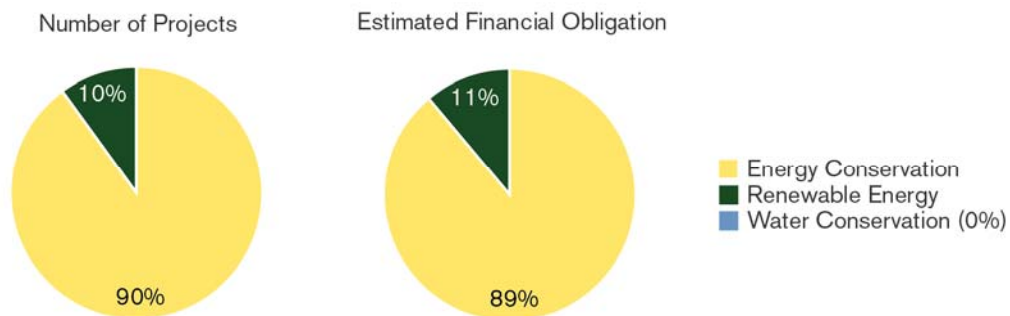
Project Type	Estimated Financial Obligation (\$000)	Number of projects
Navy = 311 Projects		
Energy Conservation	\$373,520	271
Renewable Energy	\$52,060	40
Marine Corps = 339 Projects		
Energy Conservation	\$184,076	311
Renewable Energy	\$14,142	28
Grand Total	\$623,797	650

Of the total number of projects in FY 2012, 90 percent were energy efficiency projects, as illustrated in Figure 7-3. It should also be noted that water conservation projects tend to be packaged with DON's energy efficiency projects, so separate data is not available.



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Figure 7-3: FY 2012 DON Projects Funded by Appropriations



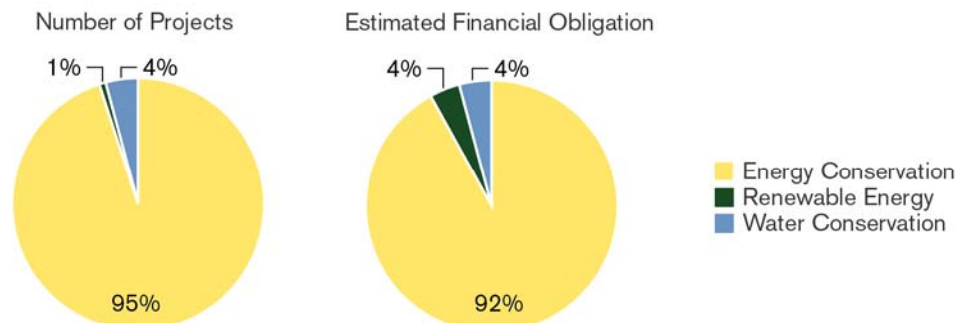
Air Force

In FY 2012, the Air Force spent \$238 million in appropriated funds for 298 energy conservation, renewable energy, and water conservation projects. These projects included retrocommissioning facilities, repairing utility meters, chiller replacements, lighting projects, and water conservation investments. As shown in Figure 7-4, energy efficiency projects dominated the supply mix, with 96 percent of the projects awarded in FY 2012, followed by water conservation and renewable energy projects, which together amounted to four percent of the Air Force's projects. Table 7-4 summarizes the breakdown of appropriated projects and associated funding for the Air Force.

Table 7-4: FY 2012 Air Force Appropriations

Project Type	Estimated Financial Obligation (\$000s)	Number of Projects
Energy Conservation	\$219,397	283
Renewable Energy	\$8,807	2
Water Conservation	\$10,259	13
Total	\$238,463	298

Figure 7-4: FY 2012 Air Force Projects Funded by Appropriations





Office of the Deputy Under Secretary of Defense (Installations and Environment)

Energy Projects Financed Through Non-Governmental Third-Party Mechanisms

The Department is increasingly relying upon non-Governmental third-party financing mechanisms such as Utility Energy Savings Contracts (UESCs) and Energy Savings Performance Contracts (ESPCs). These financing strategies allow DoD to implement energy efficiency and renewable energy projects. In FY 2012, DoD awarded nearly \$800 million in non-governmental third-party financed ESPCs and UESCs. Table 7-5 summarizes the total contract awarded value of ESPCs and UESCs financed in FY 2012. This section provides an overview of the Services' ESPC and UESC initiatives for FY 2012.

Table 7-5: FY 2012 DoD Non-Governmental Third-Party Funding

Funding Mechanism	Estimated Financial Obligation (\$000)
ESPC	\$600,089
UESC	\$198,830
Total	\$798,919

Funding Mechanism	Definition¹⁸
Energy Savings Performance Contracts (ESPC)	An ESPC is a partnership between a Federal agency and an energy service company (ESCO). The ESCO conducts a comprehensive energy audit for the Federal facility and identifies improvements to save energy. In consultation with the Federal agency, the ESCO designs and constructs a project that meets the agency's needs and arranges the necessary funding. The ESCO guarantees that the improvements will generate energy cost savings sufficient to pay for the project over the term of the contract. After the contract ends, all additional cost savings accrue to the agency. Contract terms up to 25 years are allowed.
Utility Energy Savings Contracts (UESC)	In a UESC, a utility arranges funding to cover the capital costs of the project, which are repaid over the contract term from cost savings generated by the energy efficiency measures. With this arrangement, agencies can implement energy improvements with no initial capital investment. The net cost to the Federal agency is minimal, and the agency saves time and resources by using the one-stop shopping provided by the utility.

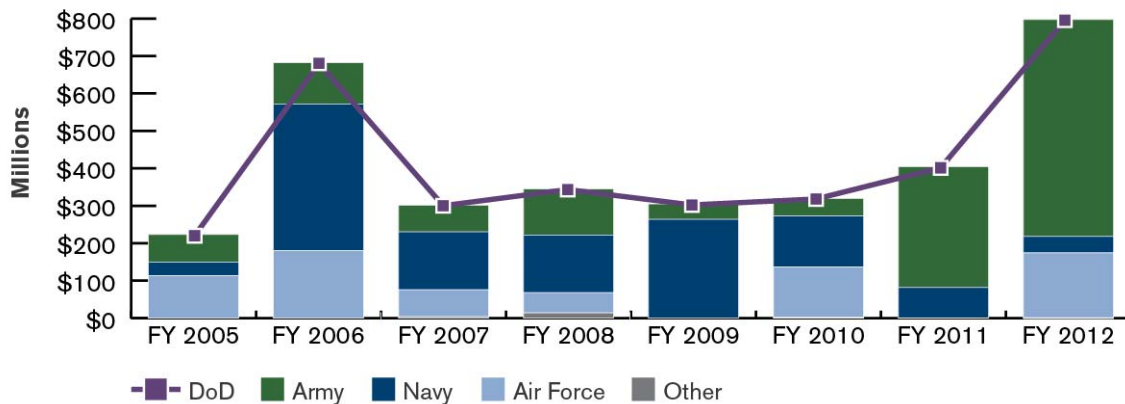
¹⁸ U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Project Funding* [online source] (Washington, D.C., 2011, accessed June 1, 2012), available from <http://www1.eere.energy.gov/femp/financing/espcs.html>, Internet.



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Non-governmental third-party financing remained relatively stable between FY 2007 and FY 2010. In FY 2011 and 2012, the Army experienced significant increases in awarded projects financed through non-governmental third-party mechanisms, and DoD increased the total amount of ESPC and UESCs awarded between FY 2011 and FY 2012 by nearly \$400 million, in response to the President's \$2 billion Federal Government performance contracting goal (Figure 7-5).

Figure 7-5: FY 2005 - FY 2012 DoD Non-Governmental Third-Party Financing



DoD also continues its efforts to privatize utilities. Utilities privatization (UP) is a method by which military installations can obtain safe, technologically current, and environmentally sound utility systems, at a relatively lower cost than they would under continued government ownership. DoD is responding to the House of Representatives report for the FY 2012 NDAA in this AEMR. This report requests DoD to: (1) update Section 2823(f) of the FY 2006 NDAA and (2) provide an assessment of whether it would be beneficial to leverage UP to increase the use of renewable energy and conserve water. Appendix K responds to this request.

Army

In FY 2012, the Army advanced its program management and oversight of ESPCs and UESCs. The Army uses the ESPC and UESC funding mechanisms to support its energy efficiency strategy and achieve energy reduction goals. In FY 2012, the Army awarded \$580 million in ESPCs and UESCs projects (Table 7-6).



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Table 7-6: FY 2012 Army Non-Governmental Third-Party Funding

ESPC	Count, Thou. \$s
Number of ESPC Task/Delivery Orders awarded in fiscal year	20
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services).	\$426,297
UESC	Count, Thou. \$s
Number of UESC Task/Delivery Orders awarded in fiscal year	11
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services).	\$153,535

Army UESC and ESPC projects awarded in FY 2012 include:

- **White Sands Missile Range:** Awarded the largest PV solar project in the Army at 4.1 MW;
- **Fort Bliss and Fort Buchanan:** Awarded 11 MW of renewable energy generation; and,
- **Fort Carson:** Awarded an ESPC task order for lighting, water fixtures, variable speed drives, window upgrades and building infiltration reduction.

DON

In FY 2012, the Navy awarded 8 UESC projects valued at \$44 million (Table 7-7). In FY 2012, the Marine Corps did not award any ESPC or UESC projects.

Table 7-7: FY 2012 DON Non-Governmental Third-Party Funding

UESC	Count, Thou. \$s
Number of UESC Task/Delivery Orders awarded in fiscal year	8
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services).	\$22,115

DON issued the following UESC projects in FY 2012:

- **Naval Air Station Whiting Field:** Awarded a \$3.6 million UESC to Gulf Power for an energy conservation project designed to reduce energy consumption and upgrade the energy management infrastructure of 12 facilities. The annual energy and water savings from the project are 14,850 MBtu and 1.3 million gallons of water per year, which will translate to an annual savings of more than \$300,000.
- **Naval Station Mayport:** Awarded a \$3.2 million UESC for an energy conservation project, which includes the installation of Direct Digital Controls (DDCs) for efficient management of HVAC systems for 55 facilities on the installation. The annual energy savings from this UESC is estimated to be more than 5,000 MWh and over \$421,000 per year.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

Air Force

In FY 2012, the Air Force awarded 1 ESPC task order valued at \$174 million and 2 UESCs worth \$0.5 million (Table 7-8).

Table 7-8: FY 2012 Air Force Non-Governmental Third-Party Funding

ESPC	Count, Thou. \$s
Number of ESPC Task/Delivery Orders awarded in fiscal year	1
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services).	\$173,792
UESC	Count, Thou. \$s
Number of UESC Task/Delivery Orders awarded in fiscal year	2
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services).	\$479

The Air Force issued the following UESC and ESPC projects in FY 2012:

- **Tinker Air Force Base:** Awarded an \$81 million ESPC project which decentralizes the central boiler plants at Tinker, replacing them with smaller, more efficient boilers in 70 buildings. When complete, this project will save Tinker 493,000 MBtus annually, enough energy to annually power 12,242 homes.
- **Tyndall:** Awarded two UESCs that will upgrade lighting in 48 buildings and upgrade motor efficiency in 26 buildings.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

8. Federal Building Energy Efficiency Standards

In addition to retrofitting existing buildings, the Department is taking advantage of new construction to incorporate more energy-efficient designs, material, and equipment into its building inventory—with the goal of producing new buildings that are less expensive to own and operate, improve employee productivity and leave a smaller environmental footprint. Currently, all new construction must meet the LEED Silver (or an equivalent) standard and in accordance with Executive Order 32514, comply with the five Guiding Principles for High Performance Sustainable Buildings. New construction must also exceed the energy efficiency standard set by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) by at least 30 percent.

With the help and concurrence of the Military Departments, DUSD(I&E) recently published a new Unified Facilities Criteria document, which sets standards for all new construction and major renovation within the Department to ensure we consistently produce high performance, sustainable buildings. The goal is to improve the full range of building performance (including water, energy, and indoor environment) cost-effectively by prescribing choice features of existing commercial codes and by requiring that the building be designed to reduce total ownership costs. To assist in developing this code, DUSD(I&E) has asked the National Research Council (NRC) to evaluate the cost-effectiveness of major third-party “green building” rating systems and standards. In addition, the NRC proposed an alternative life-cycle cost analysis methodology for use by DoD that accounts for expected future conditions (such as rising utility costs) to refine investment decisions. The NRC report was published on February 15, 2013.

The Guiding Principles of Federal Leadership in High Performance and Sustainable Buildings (HPSB) outline five strategic principles aimed at helping federal agencies and organizations reduce the total ownership cost of facilities; improve energy efficiency and water conservation; provide safe, healthy, and productive building environments; and promote sustainable environmental stewardship. The HPSB guides agencies to use integrated design principles, optimize energy performance, protect and conserve water, enhance indoor environmental quality, and reduce the environmental impact of materials.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

DoD's Progress Toward Meeting ASHRAE 90.1 Standards

The Department continues to incorporate sustainable and high performance building design elements to enhance energy and water system efficiencies. In FY 2012, 94 percent of new building designs, started in FY 2007, are expected to meet the ASHRAE 90.1 standard. Appendix I includes a list of all new DoD buildings constructed since 2007, and their energy consumption levels in relation to ASHRAE 90.1 standards.

Army

In 2012, all new Army buildings were designed to:

- Use 30 percent less energy than ASHRAE 90.1 standards,
- Meet the U.S. Green Building Council (USGBC) LEED Silver requirements, and,
- Consider energy and sustainability fundamental components of new facility design.

DON

In FY 2012, DON designed 7 projects that were, on average, 30 percent above the ASHRAE 90.1 standard. Additionally, DON has an ongoing effort to install advanced utility meters in facilities to provide energy usage data for various building types. The metering effort will allow DON to enhance reporting capabilities of its compliance with the ASHRAE 90.1 standard.

Air Force

In FY 2012, 81 percent of Air Force new construction projects met or exceeded the 30 percent reduction requirement. If the project did not meet the ASHRAE requirement, the Air Force used life-cycle cost analysis to evaluate the design options and determine the highest energy efficiency that is life-cycle cost effective. This approach is in accordance with 10 Code of Federal Regulations (CFR) Part 436. Many facilities were not able to achieve the 30 percent reduction due to intensive HVAC and ventilation requirements. These facilities include medical, industrial and electronic intensive facilities. Notable achievement of greater than or equal to 50 percent energy reduction was accomplished by 5 percent of the projects, with seven projects attempting to exceed 70 percent reduction.

DoD's Progress in Meeting Green Building Standards

DoDI 4170.11 and Executive Order 13514 require new buildings to be constructed to LEED Silver standards, where cost-effective. In FY 2012, DoD continued to add LEED buildings to its inventory (see Appendix I for a full list of projects).

Army

The Army requires that the USGBC's LEED rating system is used as the method for evaluating/self-scoring the sustainable design of Army projects, starting with the FY 2008 Military Construction program. The Army Sustainable Design and Development Policy requires new construction and major



Office of the Deputy Under Secretary of Defense (Installations and Environment)

renovations to achieve a minimum of LEED Silver certification. Beginning in FY 2013, vertical construction (meeting minimum USGBC characteristics) and major renovation projects will incorporate sustainable design principles into site selection, design, and construction and must be externally certified by the Green Building Certification Institute at the LEED-New Construction/Major Renovation Silver level. Presently, the Army has 124 LEED accredited buildings.

DON

DON has a total of 70 LEED certified projects. In FY 2012, the USGBC determined that 19 Navy projects were LEED certified. An additional 11 projects in FY 2012 reported pending certifications. Examples of Navy recognition in this category in FY 2012 include:

- In June 2012, the Navy celebrated a LEED certification for a child development center (CDC) at Joint Base Pearl Harbor-Hickam, Hawaii. Sustainability features include advanced metering, gas appliances, rooftop integrated thin film PV panels, and new carport structures. The facility is designed to operate at net-zero.
- In May 2012, Naval Submarine Base New London, Connecticut celebrated a LEED Silver award for the Submarine Learning Center. The Center is the most environmentally friendly and energy efficient facility on the installation and was the first to be built to LEED standards. A white polyvinyl chloride (PVC) roof membrane provides a reflective, energy efficient, cool cap to the building. Interior and exterior lighting strategies optimize natural daylight. The building also uses a geothermal cooling and heating system to increase energy efficiency.
- In August 2012, the Navy cut the ribbon on a new bachelor enlisted quarters at Naval Auxiliary Landing Field San Clemente Island, California. The building features energy efficient and environmentally friendly designs such as an integrated roof for solar electricity and wind power generation. The building is designed to be net zero, with the amount of energy provided by the on-site renewable energy sources equaling the amount of energy used by the building.

Air Force

The Air Force continues to pursue the USGBC LEED Silver certification in all new vertical construction. To date, the Air Force has:

- 88 LEED certified facilities,
- 812 LEED Silver certified homes, and,
- Over 300 projects registered for certification with USGBC.

Understanding that education is integral to success, the Air Force developed and conducted a series of sustainable design and development and LEED workshops. Over 1,000 Air Force personnel attended the workshops at regional locations, worldwide, with approximately 125 Air Force personnel becoming LEED Accredited Professionals. The LEED training requirement has transitioned to the more traditional Air Force education venues; both the U.S. Air Force Academy and the Air Force Institute of Technology now offer LEED courses in their curricula.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

EISA 2007 Section 433 Required Reduction in Fossil Fuel Use

EISA 2007 Section 433, *Federal Building Energy Efficiency Performance Standards*, directs DOE to issue revised Federal building energy efficiency performance standards. These standards specify that buildings be designed such that the energy consumption generated from fossil fuels is gradually reduced.

To date, DOE has not published the final regulation for implementing Section 433. DoD will start reporting on this requirement after DOE issues the final rule. In FY 2012, DoD provided DOE with consolidated feedback from DoD Components addressing DOE's notice of the proposed rule. DoD continues to work with DOE to analyze and quantify the effect of such a policy, and develop appropriate follow-on implementation policy.

Army

The Army's approach to reducing fossil fuel consumption in facilities is three-pronged: First, the Army is pursuing a low-energy model; second, it is considering site-specific conditions with respect to greenhouse gas (GHG) emissions, including opting to use natural gas over electricity for a facility's heating when considering GHG emissions from electricity generation. Lastly, the Army is adding renewable energy sources as available. The Army believes that it is more cost-effective to reduce the amount of energy required to operate a building than to generate it. The Army has adopted, and continues to seek, new or underutilized technologies and design practices to lower the energy usage of its facilities. USACE has been working closely with the Department of Energy, the Passive House Institute, and collaborating with the other Services pursuing the same goals.

DON

DON's aggressive pursuit of energy conservation measures in new construction is directly reducing fossil fuel usage. Current DON criteria and design specifications call for 30 percent of domestic hot water usage to be generated by solar energy if life-cycle cost effective. Both recovered and renewable energy shall be used in all designs to the maximum extent possible that is life-cycle cost effective. DON continues to pursue and implement the SECNAV energy goal requiring at least 50 percent of shore based energy requirements be obtained from alternative energy sources by 2020.

Air Force

In an effort to understand the scope of the requirements in the proposed rule, the Air Force is conducting two sets of studies. The first set of studies will assess five projects in the FY 2012 MILCON program to determine: 1) the feasibility of meeting/exceeding the energy related Federal mandates of EAct 2005 and Executive Order 13423 and 2) given the state of existing technology, determine whether the EISA 2007 fossil fuel-reduction requirement can be met. The second set of studies will assess six projects in the FY 2013 MILCON program to determine the cost differential to achieve Net Zero energy using commercially available technologies. The alternatives of both studies will also be assessed from a



Office of the Deputy Under Secretary of Defense (Installations and Environment)

life-cycle cost and maintainability perspective. The results of the studies will identify a path forward to achieve the net zero energy and reduction in fossil fuel-generated energy mandates.

Defense Agencies

DIA is also working to reduce fossil fuel consumption in its facilities. DIA is both maximizing implementation of cost-effective, renewable on-site power generation during the initial design phase, as well as ensuring the buildings are constructed so installation of these technologies can be added as the economics become more favorable in the future. Other design features to reduce consumption of fossil fuel include lighting and daylight sensors throughout the campus.



Office of the Deputy Under Secretary of Defense (Installations and Environment)

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APPENDIX A

LIST OF ENERGY ACRONYMS

Acronym	Definition
ACSIM	Assistant Chief of Staff for Installation Management
AEMR	Annual Energy Management Report
AF	Air Force
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFCEE	Air Force Center for Engineering and the Environment
AFCESA	Air Force Civil Engineer Support Agency
AFERS	Air Force Energy Reporting System
AFEC	Air Force Facility Energy Center
AFMC	Air Force Material Command
AFRPA	Air Force Real Property Agency
AFV	Alternative Fuel Vehicle
ALT	Acquisition, Logistics and Technology
AMI	Advanced Metering Infrastructure
AMRS	Advanced Meter Reading Systems
AMS	Advanced Metering System
ARRA	American Recovery and Reinvestment Act
ASA (IE&E)	Assistant Secretary of the Army for Installations, Energy and Environment
ASD (HD&ASA)	Assistant Secretary of Defense for Homeland Defense and America's Security Affairs
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASN (EI&E)	Assistant Secretary of the Navy for Energy, Installations and Environment
BBtu	Billion British thermal unit
Btu	British thermal unit
CDC	Child Development Center
CIRCUITS	Comprehensive Utilities Information Tracking System
CNIC	Commander, Navy Installations Command
CNG	Compressed Natural Gas
CNO	Chief of Naval Operations
DASA (E&S)	Deputy Assistant Secretary of the Army for Energy and Sustainability
DASN	Deputy Assistant Secretary of the Navy
DCMA	Defense Contract Management Agency
DDCs	Direct Digital Controls
DeCA	Defense Commissary Agency
DFAS	Defense Finance and Accounting Service
DIA	Defense Intelligence Agency
DIB	Defense Industrial Base

DLA	Defense Logistics Agency
DoD	Department of Defense
DoDI	Department of Defense Instruction
DOE	Department of Energy
DON	Department of the Navy
DUSD (I&E)	Deputy Under Secretary of Defense (Installations and Environment)
DWCF	Defense Working Capital Fund
E.O.	Executive Order
E85	85 percent ethanol fuel
ECIP	Energy Conservation Investment Program
EEIM	Enterprise Energy Information Management
EGSEC	Energy Grid Security Executive Council
EIA	Energy Information Agency
EISA	Energy Independence and Security Act
EITF	Energy Initiatives Task Force
EPA	Environmental Protection Agency
EPACT	Energy Policy Act
ES3P	Energy Surety Public-Private Partnership
ESAP	Energy Security Audit Program
ESCO	Energy Service Company
ESPC	Energy Savings Performance Contract
ESTCP	Environmental Security Technology Certification Program
EUL	Enhanced Use Leases
EXWC	Engineering and Expeditionary Warfare Center
FEMP	Federal Energy Management Program
FY	Fiscal Year
GSA	General Services Administration
GSF	Gross Square Foot
GSHP	Ground Source Heat Pump
GW	Gigawatt, 1 billion Watts
HASC	House Armed Services Committee
HQ	Headquarters
HVAC	Heating, Ventilating, and Air Conditioning
ICS	Industrial Control System
ILA	Industrial, Landscape and Agriculture
IMCOM	Installation Management Command
JCTD	Joint Capability Technology Demonstration
JIOWC	Joint Information Operations Warfare Center
KW	Kilowatt, 1 thousand Watts
KWh	Kilowatt-Hour, 1 thousand Watt-hours
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design

LPG	Liquefied Petroleum Gas
LSEV	Low Speed Electric Vehicles
MAD	Mission Assurance Division
MAJCOM	Major Command
MBTU	Million British Thermal Units
MCAGCC	Marine Corps Air Ground Combat Center
MCAS	Marine Corps Air Station
MCICOM	Marine Corps Installations Command
MCLB	Marine Corps Logistics Base
MDA	Missile Defense Agency
MDMS	Meter Data Management System
MEDCOM	Medical Command
MILCON	Military Construction
MIT-LL	Massachusetts Institute of Technology - Lincoln Laboratory
MBTU	Million British Thermal Units
MSW	Municipal Solid Waste
MW	Megawatt, 1 million Watts
MWh	Megawatt-Hour, 1 million Watt-hours
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAWS	Naval Air Weapons Station
NCR	National Capital Region
NDAA	National Defense Authorization Act
NDW	Naval District Washington
NECPA	National Energy Conservation Policy Act
NGA	National Geospatial-Intelligence Agency
NNSY	Norfolk Navy Shipyard
NRC	National Research Council
NRO	National Reconnaissance Office
NREL	National Renewable Energy Laboratory
NSA	National Security Agency
NTV	Non-Tactical Vehicles
NZEI	Net Zero Energy Installation
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OPNAV	The Office of the Chief of Naval Operations Shore Installation Management Division
PM	Program Management
PPA	Power Purchase Agreement
PV	Photovoltaic
PVC	Polyvinyl Chloride
REC	Renewable Energy Certificate

REPD	Renewable Energy Project Development
RFP	Request for Proposal
SAC	Senate Armed Services Committee
SAF/IE	Secretary of the Air Force for Installations, Environment and Logistics
SCADA	Supervisory Control and Data Acquisition
SECNAV	Secretary of the Navy
SMDC	Space and Missile Defense Command
SPIDERS	Smart Power Infrastructure Demonstration for Energy Reliability and Security
SRM	Sustainment, Restoration, and Modernization
SUV	Sports Utility Vehicle
TMA	TRICARE Management Agency
UESC	Utility Energy Service Contract
UPS	Uninterruptable Power Supply
USACE	US Army Corp of Engineers
USAF	United States Air Force
USAR	US Army Reserves
USARNG	US Army Reserves National Guard
U.S.C	United States Code
USC	Utility Service Contract
USGBC	United States Green Building Council
USMC	United States Marine Corps
VCSE	Virtual Control System Environment
WHS	Washington Headquarters Service

APPENDIX B

COMPLIANCE MATRIX

	Subsection / Paragraph	Description	FY2012 AEMR Chapter / Appendix	Page Number
10 USC § 2925	(a)	Annual Report Related to Installations Energy Management.— Not later than 120 days after the end of each fiscal year, the Secretary of Defense shall submit to the congressional defense committees an installation energy report detailing the fulfillment during that fiscal year of the energy performance goals for the Department of Defense under section 2911 of this title. Each report shall contain the following:		
	(a)(1)	A description of the progress made to achieve the goals of the Energy Policy Act of 2005 (Public Law 109–58), section 2911 (e) of this title, section 553 of the National Energy Conservation Policy Act (42 U.S.C. 8259b), the Energy Independence and Security Act of 2007 (Public Law 110–140), and the energy performance goals for the Department of Defense during the preceding fiscal year.	2, 3, 5, 7	9, 15, 53, 71
	(a)(2)	A table detailing funding, by account, for all energy projects funded through appropriations.	Appendix H	H-1
	(a)(3)	A table listing all energy projects financed through third party financing mechanisms (including energy savings performance contracts, enhanced use leases, utility energy service contracts, utility privatization agreements, and other contractual mechanisms), the duration of each such mechanism, an estimate of the financial obligation incurred through the duration of each such mechanism, whether the project incorporates energy security into its design, and the estimated payback period for each such mechanism.	Appendix H	H-1
	(a)(4)	In addition to the information contained in the table listing energy projects financed through third party financing mechanisms, as required by paragraph (3), the table also shall list any renewable energy certificates associated with each project, including information regarding whether the renewable energy certificates were bundled or unbundled, the purchasing authority for the renewable energy certificates, and the price of	4	31

	Subsection / Paragraph	Description	FY2012 AEMR Chapter / Appendix	Page Number
		the associated renewable energy certificates.		
	(a)(5)	A description of the actions taken to implement the energy performance master plan in effect under section 2911 of this title and carry out this chapter during the preceding fiscal year	3, 4	15, 31
	(a)(6)	A description of the energy savings realized from such actions.	3, 4	15, 31
	(a)(7)	An estimate of the types and quantities of energy consumed by the Department of Defense and members of the armed forces and civilian personnel residing or working on military installations during the preceding fiscal year, including a breakdown of energy consumption by user groups and types of energy, energy costs, and the quantities of renewable energy produced or procured by the Department.	3	15
	(a)(8)	A description of the types and amount of financial incentives received under section 2913 of this title during the preceding fiscal year and the appropriation account or accounts to which the incentives were credited.	3, 7	15, 71
	(a)(9)	A description and estimate of the progress made by the military departments to meet the certification requirements for sustainable green-building standards in construction and major renovations as required by section 433 of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1612).	8	81

	Subsection / Paragraph	Description	FY2012 AEMR Chapter / Appendix	Page Number
	(a)(10)	A description of steps taken to determine best practices for measuring energy consumption in Department of Defense facilities and installations, in order to use the data for better energy management.	6	65
	(a)(11)	Details of utility outages at military installations including the total number and locations of outages, the financial impact of the outage, and measures taken to mitigate outages in the future at the affected location and across the Department of Defense.	5	53
	(a)(12)	A description of any other issues and strategies the Secretary determines relevant to a comprehensive and renewable energy policy.	4	31
10 USC § 2911	(a)(1)	Energy Performance Goals. The DoD shall submit to the congressional defense committees the energy performance goals for the Department of Defense regarding transportation systems, support systems, utilities, and infrastructure and facilities.	Appendix C	C-1
	(b)(1)	Energy Performance Master Plan. The DoD shall develop a comprehensive master plan for the achievement of the energy performance goals of the Department of Defense, as set forth in laws, executive orders, and Department of Defense policies.	Appendix C	C-1
	(e)(2)	Interim Renewable Energy Goal. Requires the DoD to establish an interim FY 2018 goal for the production or procurement of facility energy from renewable sources.	4, Appendix C	30, C-1
Committee on Armed Services House of Representatives Report on NDAA 2010 (Report 111-166)	p.541-542	A report on whether as of the end of FY 2009, each military construction project or major renovation has achieved compliance with the respective service's policy to apply LEED silver standards.	Appendix I	I-1
Energy Conservation Investment Program	112-194 HAC MilCon VA, pg. 20	The Deputy Under Secretary for Installations and Environment shall report to the congressional defense committees on the Department's plan to implement these technologies across the Department of Defense within 60 days of enactment of this Act.	5	53

	Subsection / Paragraph	Description	FY2012 AEMR Chapter / Appendix	Page Number
Senate Committee on Appropriations Report on Military Construction and Veterans Affairs and Related Agencies Appropriation Bill, 2010 (Report 111-40)	p. 17	...directs the SECDEF to provide to the congressional defense committees a report on the steps taken to incorporate these technologies (green roof, cool roof, photovoltaic) into the fiscal year 2010 and 2011 MILCON program. This report shall be provided with the FY2011 MILCON budget submission.	Appendix J	J-1
Senate Committee on Appropriations Report on Military Construction and Veterans Affairs and Related Agencies Appropriation Bill, 2013 (Senate Report 112-168)		The Secretary of Defense shall submit a report to the congressional defense committees, no later than 180 days from the enactment of this act, regarding: (1) the status of microgrid demonstrations currently deployed domestically; (2) the Department's plan to secure energy supplied to military installations to meet mission essential requirements; and (3) the potential benefits of the wide-spread use of secure microgrid technology on domestic military installations.	5	53
NDAAs 2013	2824(a)	The Secretary of Defense shall issue guidance about the use of available financing approaches for financing renewable energy projects	4	31
NDAAs 2012 (HASC Report 112-78)	p. 294	Secretary of Defense to submit a report to the congressional defense committees that includes the following: (1) An update of the report elements included in section 2823(f) of the National Defense Authorization Act for FY 2006 (Public Law 109-163); and (2) An assessment of whether it would be beneficial to leverage utilities privatization as part of agency initiatives to increase use of renewable energy and conserve water.	Appendix K	K-1

	Subsection / Paragraph	Description	FY2012 AEMR Chapter / Appendix	Page Number
Senate Committee on Appropriations Report on Department of Defense Appropriations Bill, 2013 (Senate Report 112-196)	14	...the Committee directs the Deputy Under Secretary of Defense for Installations and Environment to provide a report to the congressional defense committees not later than 180 days after enactment of this act on the viability or incompatibility of solar energy for Nellis and Creech Air Force Bases.	4, Appendix G	31, G-1

APPENDIX C

ENERGY PERFORMANCE MASTER PLAN

Introduction

The Energy Performance Master Plan (hereafter referred to as Master Plan) aligns investments to energy objectives, enables consistent Department-wide decision-making, and establishes metrics to evaluate the Department of Defense's (DoD's) progress against the energy performance goals. The Master Plan was established and reported in the FY 2011 Annual Energy Management Report (AEMR). The goals outlined in the Master Plan align with the Department's facility energy strategy designed to reduce energy costs and improve the energy security of fixed installations. The Department's facility energy strategy focuses on promoting efficiency, reducing costs, and supporting the mission. The key elements of the facility energy strategy are (Figure 1.0):

Facility energy is the energy necessary to support the functions of over 500 fixed installations on nearly 29 million acres of land within the United States and internationally. This energy is distinct from operational energy which consists largely of mobility fuel that is used by operational aircraft, ships, and tanks, as well as generators at forward operating bases.

Figure 1.0: Facility Energy Strategy



- Reduce energy demand through energy-efficient facilities and behavior-based conservation;
- Expand the supply of renewable energy;
- Enhance the energy security of DoD installations; and
- Leverage investment toward the development of advanced energy technologies.

In FY 2011, the Deputy Under Secretary of Defense for (Installations and Environment) (DUSD(I&E)) developed its energy performance goals and its first Master Plan with input from the DoD Components. The energy performance goals will be reviewed and reported annually, while the Master Plan will be updated periodically in the AEMR. However, DoD Components are required to submit their facility energy investment projections for the Future Years Defense Program (FYDP) as part of their Master Plan submittal. The DoD Components' submissions to the President Budget, investment profile, energy benefit analyses and narratives will be the basis for any periodic updates of the Master Plan within the AEMR.

1.1 Energy Performance Goals

The DUSD(I&E) oversees the Department's facility energy program. DUSD(I&E) collaborated with the Military Departments and Defense Agencies to develop its energy performance goals. These energy performance goals of the DoD have not changed from its previous submittal, and Table 1.0 summarizes the three DoD facility energy performance goals. The table defines these goals and describes the associated measures, methods of measurement, and metrics. Table 1.1 summarizes DoD's targets for each goal, including the interim FY 2018 renewable goal (also part of last year's submittal).

Table 1.0: DoD Energy Performance Goals

Goal	Description	Uniform Measure	Method of Measurement	Metric
Improve Energy Efficiency	Decrease installation energy consumption and improve energy intensity.	Energy consumption ¹ per gross square foot (energy intensity).	Energy intensity reduction.	British thermal units per thousand gross square feet (Btu/ Thousand GSF)
Increase Renewable Energy	Increase the production and procurement of on-base renewable energy.	Electric and non-electric renewable energy production and procurement.	Electric and non-electric renewable energy produced or procured compared to electricity consumption.	Billion Btu (BBtu)
Decrease Petroleum Consumption	Decrease petroleum consumption in fleet vehicles.	Fleet vehicle petroleum consumption. ²	Fleet vehicle petroleum consumption reduction.	Gallons of gasoline Equivalent (GGE)
¹ Energy consumption includes electricity, natural gas, fuel oil, propane, purchased steam and hot water, and coal.				
² Petroleum includes gasoline, diesel, and the diesel portion of biodiesel (B20).				

Table 1.1: Energy Performance Goals Annual Targets

Target	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY25
Energy Efficiency	-18%	-21%	-24%	-27%	-30%	-31.5%	-33%	-34.5%	-36%	-37.5%	-
Renewable Energy	-	-	-	-	-	-	-	+15%	-	-	+25%
Petroleum Consumption	-12%	-14%	-16%	-18%	-20%	-22%	-24%	-26%	-28%	-30%	-

The DoD will update this Master Plan periodically to address new information, changes in energy performance goals, and to identify the investments necessary to achieve those goals. DoD's commitment to meeting the energy performance goals also supports compliance with energy statutes, regulations and Executive Orders (EOs). Accordingly, the energy performance goals continue to advance the DoD facility energy mission, vision, and strategy.

APPENDIX D
DOD ENERGY PERFORMANCE SUMMARY

Energy Management Requirement	FY 2003 Btu/GSF	FY 2012 Btu/GSF	Percent Change FY 2003 - FY 2012	FY 2012 Goal Target
Reduction in energy intensity in facilities subject to the NECPA/E.O. 13423 goals	117,334	96,593	-17.7%	21.0%

Renewable Energy Requirement	Renewable Electricity Use (MWH)	Total Electricity Use (MWH)	Percentage	FY 2012 Goal Target
Eligible renewable electricity use as a percentage of total electricity use	1,202,812.8	30,371,896.9	3.96%	5.0%

Water Intensity Reduction Goal	FY 2007 Gallon/GSF	FY 2012 Gallon/GSF	Percent Change FY 2007 - FY 2012	FY 2012 Goal Target
Reduction in potable water consumption intensity	59.6	48.5	-18.6%	10.0%

Metering of Electricity Use	Cumulative # of Buildings Metered	Cumulative % of Electricity Metered	Cumulative % of Appropriate Buildings Metered	FY 2012 Goal Target
Standard Electricity Meters in FY 2012	8,854	20.6%	24.5%	100%
Advanced Electricity Meters in FY 2012	20,984	42.9%	58.0%	Maximum Extent Practicable
Total Electricity Meters in FY 2012	29,838	63.5%	82.5%	

Federal Building Energy Efficiency Standards	Percent of New Building Designs	FY 2007 forward Goal Target
Percent of new building designs started since beginning of FY 2007 that are 30 percent more energy efficient than relevant code, where life-cycle cost effective (including 8/2012 standards):	94%	100%

Investments in Energy and Water Management

Sources of Investment	Investment Value (Thou. \$)	Anticipated Annual Savings (Million Btu)
Direct obligations for facility energy efficiency improvements	\$711,178.4	4,506,138.0
Investment value of ESPC Task/Delivery Orders awarded in fiscal year	\$299,343.4	1,243,767.0
Investment value of UESC Task/Delivery Orders awarded in fiscal year	\$63,583.7	699,349.0
Total	\$1,074,105.5	6,449,254.0

	Percentage
Total investment as a percentage of total facility energy costs	28.5%
Financed (ESPC/UESC) investment as a percentage of total facility energy costs	9.6%

i. NECPA/EISA Energy Goal Subject Buildings

Energy Type	BBtu	Cost (thous.)
Electricity	92,983.1	2,371,184.2
Fuel Oil	15,546.8	418,230.9
Natural Gas	61,508.8	398,841.8
LPG	1,010.5	24,706.6
Coal	9,442.8	49,353.9
Steam	5,930.1	154,240.1
Other	981.8	40,439.8
Totals	187,404.0	3,456,997.3

FY 2012 Goal Subject Square Feet (thou.)	1,896,110.5
Btu/GSF:	98,836
Source Energy Savings Credit	4,247
Btu/GSF w/ RE & Source Btu Credit:	96,593

ii. NECPA/EISA Energy Goal Excluded Buildings

Energy Type	BBtu	Cost (thous.)
Electricity	9,054.1	251,323.0
Fuel Oil	577.7	14,902.2
Natural Gas	1,744.2	10,781.4
LPG	0.3	6.6
Coal	4,450.2	21,696.5
Steam	752.6	8,756.7
Other	0.0	0.0
Totals	16,579.2	307,466.4

FY 2012 Goal Subject Square Feet (thou.)	30,686.9
Btu/GSF:	540,270
Source Energy Savings Credit	906
Btu/GSF w/ RE & Source Btu Credit:	510,730

APPENDIX E

FY 2012 ENERGY INTENSITY BY INSTALLATION

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	63rd Regional Support Command	Moffett Field	California	207	6,058	34,127
Army	81st Regional Support Command	Fort Jackson	South Carolina	203	5,060	40,174
Army	88th Regional Support Command	Fort McCoy	Wisconsin	686	12,302	55,803
Army	99th Regional Support Command	Joint Base Mdl	New Jersey	418	8,263	50,600
Army	9th Mission Support Command	Honolulu	Hawaii	8	173	43,468
Army	Aberdeen Proving Ground	Aberdeen Prov Grnd	Maryland	2,266	14,111	160,587
Army	Alabama National Guard	Montgomery	Alabama	171	3,140	54,302
Army	Alaska National Guard	Fort Richardson	Alaska	68	906	75,086
Army	Anniston Army Depot	Anniston	Alabama	854	9,477	90,134
Army	Arizona National Guard	Phoenix	Arizona	65	1,646	39,342
Army	Arkansas National Guard	Camp Robinson	Arkansas	249	4,052	61,329
Army	Blue Grass Army Depot	Richmond	Kentucky	166	4,185	39,777
Army	California National Guard	Sacramento	California	228	5,345	42,693
Army	Camp Henry	Taegu	South Korea	514	5,953	86,283
Army	Camp Humphreys	Camp Humphreys	South Korea	578	6,973	82,891
Army	Camp Red Cloud	Uijong Bu	South Korea	1,073	10,090	106,318
Army	Camp Zama	Sagamihara	Japan	678	9,834	68,937
Army	Carlisle Barracks	Carlisle	Pennsylvania	129	1,090	118,783
Army	Colorado National Guard	Englewood	Colorado	72	1,073	66,699
Army	Combat Support Training Center and Camp Parks	Dublin	California	46	1,334	34,253
Army	Connecticut National Guard	Hartford	Connecticut	64	1,149	56,012
Army	Corpus Christi Army Depot	Corpus Christi	Texas	362	2,302	157,219
Army	Delaware National Guard	Wilmington	Delaware	30	486	61,033
Army	Deseret Chemical Depot	Stockton	Utah	422	1,372	307,327
Army	Detroit Arsenal	Harrison Township	Michigan	326	1,929	168,882
Army	Devens Reserve Forces Training Area	Devens	Massachusetts	88	1,283	68,890
Army	Dugway Proving Ground	Dugway	Utah	315	2,319	136,045
Army	Florida National Guard	Saint Augustine	Florida	124	2,866	43,323
Army	Fort A P Hill	Bowling Green	Virginia	63	1,225	51,409
Army	Fort Belvoir	Fort Belvoir	Virginia	1,211	11,784	102,805
Army	Fort Benning	Colombus	Georgia	1,698	20,652	82,219
Army	Fort Bliss	El Paso	Texas	1,503	22,666	66,323
Army	Fort Bragg	Fort Bragg	North Carolina	3,491	30,998	112,610
Army	Fort Buchanan	Fort Buchanan, Catano	Puerto Rico	132	2,390	55,276

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Fort Campbell	Fort Campbell	Kentucky	1,578	16,858	93,629
Army	Fort Carson	Colorado Spgs	Colorado	1,350	12,827	105,236
Army	Fort Detrick	Frederick	Maryland	1,151	8,065	142,693
Army	Fort Drum	Fort Drum	New York	1,011	10,902	92,751
Army	Fort George G Meade	Fort Meade	Maryland	413	4,479	92,196
Army	Fort Gordon	Augusta	Georgia	933	15,742	59,240
Army	Fort Greely	Delta Junction	Alaska	302	1,267	238,058
Army	Fort Hamilton	New York City	New York	61	679	90,451
Army	Fort Hood	Killeen	Texas	1,876	23,623	79,415
Army	Fort Huachuca	Fort Huachuca	Arizona	581	5,815	99,947
Army	Fort Hunter Liggett	Fort Hunter Liggett	California	69	1,140	60,746
Army	Fort Jackson	Columbia	South Carolina	933	10,696	87,258
Army	Fort Knox	Fort Knox	Kentucky	662	11,532	57,389
Army	Fort Leavenworth	Fort Leavenworth	Kansas	452	4,289	105,423
Army	Fort Lee	Fort Lee	Virginia	821	12,144	67,631
Army	Fort Leonard Wood	Fort Leonard Wood	Missouri	1,332	11,147	119,479
Army	Fort Lesley J McNair	Washington	District Of Columbia	150	1,427	105,427
Army	Fort McCoy	Sparta	Wisconsin	346	6,607	52,337
Army	Fort Polk	Fort Polk	Louisiana	700	8,160	85,748
Army	Fort Riley	Fort Riley	Kansas	1,147	14,152	81,065
Army	Fort Rucker	Fort Rucker	Alabama	574	5,352	107,318
Army	Fort Sill	Fort Sill	Oklahoma	1,086	12,183	89,126
Army	Fort Stewart	Fort Stewart	Georgia	1,202	14,849	80,961
Army	Fort Wainwright	Fort Wainwright	Alaska	3,006	6,552	458,864
Army	Georgia National Guard	Atlanta	Georgia	108	3,547	30,347
Army	Guam National Guard	Barrigada	Guam	11	172	64,273
Army	Hawaii National Guard	Honolulu	Hawaii	26	1,156	22,075
Army	Hawthorne Army Depot	Hawthorne	Nevada	141	9,426	14,923
Army	Holston Army Ammunition Plant	Kingsport	Tennessee	143	1,845	77,625
Army	Idaho National Guard	Boise	Idaho	87	1,575	55,101
Army	Illinois National Guard	Camp Lincoln	Illinois	149	2,723	54,546
Army	Indiana National Guard	Indianapolis	Indiana	341	4,132	82,549
Army	Iowa Army Ammunition Plant	Middletown	Iowa	338	3,990	84,739
Army	Iowa National Guard	Johnston	Iowa	142	3,017	47,025
Army	Joint Base Lewis-McChord	Tacoma	Washington	2,469	24,789	99,591

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Joint Base Myer-Henderson Hall	Fort Myer	Virginia	262	3,611	72,625
Army	Joint System Manufacturing Center Lima	Lima	Ohio	480	1,617	296,790
Army	Kansas National Guard	Topeka	Kansas	108	1,977	54,531
Army	Kentucky National Guard	Frankfort	Kentucky	112	1,801	62,404
Army	Lake City Army Ammunition Plant	Independence	Missouri	1,044	1,133	921,123
Army	Letterkenny Army Depot	Chambersburg	Pennsylvania	432	4,883	88,451
Army	Louisiana National Guard	Johnson Barracks	Louisiana	150	3,687	40,561
Army	Maine National Guard	Camp Keyes	Maine	44	1,043	42,510
Army	Maryland National Guard	Baltimore	Maryland	61	1,864	32,805
Army	Massachusetts National Guard	Milford	Massachusetts	66	2,140	30,649
Army	Mcalester Army Ammunition Plant	Mcalester	Oklahoma	436	9,681	45,030
Army	Michigan National Guard	Lansing	Michigan	269	3,826	70,295
Army	Milan Army Ammunition Plant	Milan	Tennessee	149	3,522	42,274
Army	Military Ocean Terminal Concord	Concord	California	12	394	29,208
Army	Military Ocean Terminal Sunny Point	Southport	North Carolina	16	363	45,077
Army	Minnesota National Guard	Camp Ripley	Minnesota	177	3,960	44,771
Army	Mississippi National Guard	Jackson	Mississippi	264	5,765	45,708
Army	Missouri National Guard	Jefferson City	Missouri	122	2,375	51,451
Army	Montana National Guard	Helena	Montana	68	1,365	50,111
Army	National Training Center And Fort Irwin	Fort Irwin	California	420	4,220	99,485
Army	Nebraska National Guard	Lincoln	Nebraska	71	1,661	42,893
Army	Nevada National Guard	Carson City	Nevada	46	475	97,651
Army	New Hampshire National Guard	Concord	New Hampshire	27	556	49,106
Army	New Jersey National Guard	Lawrenceville	New Jersey	116	1,829	63,634
Army	New Mexico National Guard	Santa Fe	New Mexico	48	1,002	47,918
Army	New York National Guard	Latham	New York	149	3,071	48,392
Army	North Carolina National Guard	Raleigh	North Carolina	89	2,280	39,045
Army	North Dakota National Guard	Bismark	North Dakota	97	1,807	53,916
Army	Ohio National Guard	Columbus	Ohio	133	3,186	41,878
Army	Oklahoma National Guard	Oklahoma City	Oklahoma	107	2,197	48,578
Army	Oregon National Guard	Salem	Oregon	145	2,286	63,402
Army	Pennsylvania National Guard	Annville	Pennsylvania	446	5,189	85,957
Army	Picatinny Arsenal	Dover	New Jersey	486	8,486	57,276
Army	Pine Bluff Arsenal	White Hall	Arkansas	483	3,619	133,510

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Presidio Of Monterey	Monterey	California	181	3,654	49,451
Army	Pueblo Chemical Depot	Pueblo	Colorado	68	2,998	22,556
Army	Puerto Rico National Guard	San Juan	Puerto Rico	50	1,589	31,515
Army	Radford Army Ammunition Plant	Radford	Virginia	196	2,335	83,747
Army	Red River Army Depot	Texarkana	Texas	682	7,138	95,528
Army	Redstone Arsenal	Huntsville	Alabama	1,943	12,982	149,698
Army	Rhode Island National Guard	Cranston	Rhode Island	56	758	73,528
Army	Rock Island Arsenal	Rock Island	Illinois	797	6,802	117,166
Army	Rocky Mountain Arsenal	Commerce City	Colorado	49	339	144,678
Army	Schofield Barracks	Wahiawa	Hawaii	854	13,677	62,456
Army	Scranton Army Ammunition Plant	Scranton	Pennsylvania	23	387	59,656
Army	Sierra Army Depot	Herlong Sierra Ord-D	California	159	5,176	30,757
Army	Soldier Systems Center	Natick	Massachusetts	120	978	122,583
Army	South Carolina National Guard	Columbia	South Carolina	103	2,325	44,219
Army	South Dakota National Guard	Rapid City	South Dakota	57	1,233	45,927
Army	Tennessee National Guard	Nashville	Tennessee	115	2,801	40,883
Army	Texas National Guard	Camp Mabry	Texas	163	3,870	42,161
Army	Tobyhanna Army Depot	Tobyhanna	Pennsylvania	540	4,580	117,926
Army	Tooele Army Depot	Tooele	Utah	70	2,610	26,811
Army	Umatilla Chemical Depot	Hermiston	Oregon	348	2,001	174,158
Army	US Army Adelphi Laboratory Center	Hyattsville	Maryland	199	1,161	171,412
Army	US Army Garrison Ansbach	Ansbach	Germany	331	6,805	48,607
Army	US Army Garrison Bamberg	Bamberg	Germany	276	5,324	51,850
Army	US Army Garrison Baumholder	Baumholder	Germany	436	7,594	57,373
Army	US Army Garrison Benelux	Brussels	Belgium	111	1,980	55,846
Army	US Army Garrison Grafenwoehr	Grafenwohr	Germany	1,182	19,509	60,603
Army	US Army Garrison Heidelberg	Heidelberg	Germany	507	19,898	25,465
Army	US Army Garrison Hohenfels	Hohenfels	Germany	293	4,280	68,497
Army	US Army Garrison Kaiserslautern	Kaiserslautern	Germany	842	13,881	60,630
Army	US Army Garrison Livorno	Livorno	Italy	102	2,348	43,402
Army	US Army Garrison Miami	Miami	Florida	77	227	340,000
Army	US Army Garrison Schinnen	Schinnen	Netherlands	31	1,182	26,212
Army	US Army Garrison Schweinfurt	Schweinfurt	Germany	302	5,678	53,225
Army	US Army Garrison Stuttgart	Stuttgart	Germany	625	8,384	74,605
Army	US Army Garrison Vicenza	Vicenza	Italy	417	4,142	100,764

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	US Army Garrison Wiesbaden	Wiesbaden	Germany	617	10,957	56,315
Army	US Army Kwajalein Atoll	Majuro Atoll	Marshall Islands	856	3,178	269,278
Army	US Virgin Islands National Guard	Christiansted	Virgin Islands	6	213	27,554
Army	Utah National Guard	Draper	Utah	100	1,831	54,779
Army	Vermont National Guard	Colchester	Vermont	49	1,069	45,457
Army	Virginia National Guard	Fort Pickett	Virginia	205	3,819	53,628
Army	Washington DC National Guard	Washington	District Of Columbia	47	873	54,166
Army	Washington National Guard	Camp Murray	Washington	68	1,300	52,199
Army	Watervliet Arsenal	Watervliet	New York	297	2,153	137,975
Army	West Point Military Reservation	West Point	New York	904	7,749	116,645
Army	West Virginia National Guard	Charleston	West Virginia	163	1,823	89,673
Army	White Sands Missile Range	Las Cruces	New Mexico	387	4,633	83,605
Army	Wisconsin National Guard	Madison	Wisconsin	172	2,562	66,950
Army	Wyoming National Guard	Chyenenne	Wyoming	111	968	114,830
Army	Yongsan Garrison	Seoul	South Korea	1,072	8,381	127,947
Army	Yuma Proving Ground	Yuma	Arizona	154	1,732	89,021
Navy	Allegany Ballistics Lab	Keyser	West Virginia	643	1,129	569,795
Navy	Camp Lemonier Djibouti	FPO	Djibouti	969	1,069	906,208
Navy	CBC Gulfport MS	Gulfport	Mississippi	158	4,601	34,364
Navy	CNI Navmag Indian Island	Indian Island	Washington	21	346	59,847
Navy	CNIC PMRF Barking Sands	Kekaha	Hawaii	61	695	87,295
Navy	Comfleact Sasebo JA	FPO	Japan	335	3,976	84,234
Navy	Comfleact Yokosuka JA	FPO	Japan	2,910	13,912	209,202
Navy	Fleet Activities Chinhae KS	FPO	Korea	31	348	88,632
Navy	FRC East Cherry Point NC	Cherry Point	North Carolina	539	1,926	279,841
Navy	JBAB Anacostia Bolling	Joint Base Anacostia Bolling	District Of Columbia	380	4,569	83,272
Navy	JBPHH Pearl Harbor Hawaii	Pearl Harbor	Hawaii	846	19,444	43,533
Navy	Intexpbase Little Creek FS VA	Virginia Beach	Virginia	719	6,914	104,000
Navy	NAF Atsugi JA	FPO	Japan	543	4,297	126,397
Navy	NAF El Centro CA	El Centro	California	71	1,194	59,678
Navy	NAS Corpus Christi TX	Corpus Christi	Texas	260	3,205	81,030
Navy	NAS Fallon NV	Fallon	Nevada	230	2,137	107,588
Navy	NAS Jacksonville FL	Jacksonville	Florida	921	8,495	108,473
Navy	NAS Jrb Ft Worth TX	Fort Worth	Texas	263	4,168	63,112

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Navy	NAS Jrb New Orleans LA	New Orleans	Louisiana	181	2,305	78,672
Navy	NAS Key West FL	Key West	Florida	199	2,861	69,725
Navy	NAS Kingsville TX	Kingsville	Texas	98	1,154	84,729
Navy	NAS Lemoore CA	Lemoore	California	309	3,575	86,538
Navy	NAS Meridian MS	Meridian	Mississippi	176	1,604	109,609
Navy	NAS Oceana VA	Virginia Beach	Virginia	678	7,366	92,055
Navy	NAS Pensacola FL	Pensacola	Florida	1,094	10,701	102,188
Navy	NAS Sigonella IT	FPO	Italy	281	3,205	87,572
Navy	NAS Whidbey Island WA	Oak Harbor	Washington	481	3,914	122,869
Navy	NAS Whiting Fld Milton FL	Milton	Florida	114	1,257	90,982
Navy	Naval Air Station Pax River	Patuxent River	Maryland	1,021	8,243	123,881
Navy	Naval Base Kitsap Bremerton WA	Bremerton	Washington	2,442	13,810	176,794
Navy	Naval Station Great Lakes IL	Great Lakes	Illinois	1,582	10,124	156,225
Navy	Naval Station Newport RI	Newport	Rhode Island	641	6,177	103,726
Navy	Naval Support Activity Crane	Crane	Indiana	764	5,876	130,072
Navy	Naval Support Activity Orlando	Orlando	Florida	24	303	78,554
Navy	Naval Support Activity Wash	Washington Navy Yard	District Of Columbia	1,686	9,732	173,235
Navy	Naval Support Acty Panama City	Panama City Beach	Florida	145	1,591	90,968
Navy	Naval Weapons Station Earle NJ	Colts Neck	New Jersey	103	1,262	81,964
Navy	Naval Weapons Station Yorktown	Yorktown	Virginia	203	5,705	35,648
Navy	Navbase Coronado	San Diego	California	1,473	13,205	111,528
Navy	Navbase Guam	FPO	Guam	523	8,456	61,804
Navy	Navbase Point Loma	San Diego	California	466	6,317	73,814
Navy	Navbase San Diego CA	San Diego	California	1,465	9,806	149,408
Navy	Navbase Ventura Cty Pt Mugu CA	Point Mugu	California	363	9,507	38,229
Navy	Navhosp Beaufort SC	Beaufort	South Carolina	86	426	202,453
Navy	Navhosp Bremerton WA	Bremerton	Washington	96	394	244,876
Navy	Navhosp Camp Pendleton CA	Camp Pendleton	California	132	791	166,568
Navy	Navhosp Guam	FPO	Guam	57	407	140,936
Navy	Navhosp Okinawa JA	FPO	Japan	68	629	107,680
Navy	Navhosp Twentynine Palms CA	Twentynine Palms	California	30	218	137,399
Navy	Navmedcen San Diego CA	San Diego	California	32	1,500	21,114
Navy	Navsta Everett WA	Everett	Washington	155	1,532	100,977
Navy	Navsta Guantanamo Bay	FPO	Cuba	1,226	6,566	186,694
Navy	Navsta Mayport FL	Mayport	Florida	235	2,875	81,911

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Navy	Navsta Norfolk VA	Norfolk	Virginia	2,032	16,217	125,303
Navy	Navsta Rota SP	FPO	Spain	247	3,844	64,323
Navy	Navsubase New London CT	Groton	Connecticut	874	3,233	270,458
Navy	Navsuppact Annapolis	Annapolis	Maryland	685	6,194	110,587
Navy	Navsuppact Bahrain	FPO	Bahrain	238	2,425	98,174
Navy	Navsuppact Bethesda MA	Bethesda	Maryland	1,004	6,690	150,030
Navy	Navsuppact Hampton Roads VA	Norfolk	Virginia	984	6,848	143,696
Navy	Navsuppact Mechanicsburg PA	Mechanicsburg	Pennsylvania	734	11,173	65,651
Navy	Navsuppact Midsouth Memphis TN	Millington	Tennessee	201	2,514	79,976
Navy	Navsuppact Naples IT	FPO	Italy	423	5,293	79,824
Navy	Navsuppact Norfolk NSY	Norfolk	Virginia	1,018	7,568	134,543
Navy	Navsuppact Souda Bay GR	FPO	Greece	39	468	83,556
Navy	Navsuppdet Monterey CA	Monterey	California	162	1,897	85,649
Navy	Navwpnsta Seal Beach	Seal Beach	California	102	2,208	46,159
Navy	NAWS China Lake	China Lake	California	579	4,682	123,739
Navy	NIOC Sugar Grove WV	Sugar Grove	Wyoming	14	194	70,139
Navy	NOSC Midlant Washington DC	Norfolk	Virginia	80	716	111,566
Navy	NOSC Midsouth	Millington	Tennessee	23	398	57,789
Navy	NOSC Midwest	Great Lakes	Illinois	30	1,453	20,546
Navy	NOSC NE Newport RI	Newport	Rhode Island	31	451	68,284
Navy	NOSC Northwest Everett WA	Everett	Washington	34	325	104,465
Navy	NOSC Southwest San Diego CA	San Diego	California	17	470	35,826
Navy	NSA Anderson	FPO	Guam	428	6,977	61,387
Navy	NSA Saratoga Springs NY	Saratoga Springs	New York	1	215	5,972
Navy	NSA South Potomac	Dahlgren	Virginia	1,066	6,479	164,557
Navy	Nsf Diego Garcia	FPO	Diego Garcia	221	2,478	89,210
Navy	NSY Portsmouth	Portsmouth	New Hampshire	1,043	5,261	198,342
Navy	Singapore Area Coordinator	FPO	Singapore	28	632	44,739
Navy	Subase Kings Bay GA	Kings Bay	Georgia	731	5,347	136,751
Air Force	166 Airlift Wing	New Castle	Delaware	24	402	60,221
Air Force	Abraham Lincoln Capital Airport	Springfield	Illinois	32	312	101,074
Air Force	Air National Guard Readiness Center	Andrews AFB	Maryland	16	348	44,888
Air Force	Alpena County Regional Airport	Alpena	Michigan	43	562	76,737
Air Force	Altus Air Force Base	Altus	Oklahoma	180	2,512	71,548
Air Force	Andersen Air Force Base	Yigo	Guam	4	49	83,531
Air Force	Arnold Air Station	Arnold Air Station	Tennessee	731	1,752	417,155

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Atlantic City International Airport	Egg Harbor Township	New Jersey	32	495	64,529
Air Force	Aviano Air Base	Aviano Ab	Italy	296	4,501	65,744
Air Force	Bangor International Airport (ANG)	Bangor	Maine	48	569	84,830
Air Force	Barksdale Air Force Base	Barksdale AFB	Louisiana	346	5,112	67,650
Air Force	Barnes Municipal Airport ANG	Westfield	Massachusetts	45	465	97,170
Air Force	Beale Air Force Base	Beale AFB	California	198	2,903	68,232
Air Force	Birmingham International Airport	Birmingham	Alabama	29	354	80,525
Air Force	Boise Air Terminal (ANG)	Boise	Idaho	34	566	60,792
Air Force	Bradley International Airport (ANG)	Orange	Connecticut	26	370	70,124
Air Force	Buckley Air Force Base	Aurora	Colorado	172	1,849	92,942
Air Force	Burlington International Airport (ANG)	South Burlington	Vermont	20	472	41,426
Air Force	Camp Blanding Military Reservation	Starke	Florida	4	116	35,250
Air Force	Camp Murray ANG Station	Everett	Washington	14	334	43,410
Air Force	Camp Pendleton Military Reservation(ANG)	Virginia Beach	Virginia	6	143	40,944
Air Force	Camp Perry ANG Station	Port Clinton	Ohio	6	103	59,097
Air Force	Cannon Air Force Base	Cannon AFB	New Mexico	263	2,726	96,317
Air Force	Channel Islands ANG Station	Port Hueneme	California	13	345	37,516
Air Force	Charleston Air Force Base	North Carleston	South Carolina	705	8,591	82,096
Air Force	Charlotte/Douglas Int Airport (ANG)	Charlotte	North Carolina	31	552	55,596
Air Force	Cheyenne Regional Airport	Cheyenne	Wyoming	40	432	92,400
Air Force	Columbus Air Force Base	Columbus	Mississippi	154	1,530	100,752
Air Force	Dane County Regional Airport-Truax Field	Windsor	Wisconsin	44	470	92,966
Air Force	Davis-Monthan Air Force Base	Tucson	Arizona	353	4,401	80,212
Air Force	Des Moines International Airport ANG	Des Moines	Iowa	38	433	87,353
Air Force	Dobbins Air Reserve Base	Marietta	Georgia	80	925	86,230
Air Force	Dover Air Force Base	Unknown	Delaware	546	3,677	148,452
Air Force	Duluth International Airport (ANG)	Duluth	Minnesota	51	505	100,293
Air Force	Dyess Air Force Base	Abilene	Texas	303	3,358	90,133
Air Force	Eareckson Air Station	Adak Station	Alaska	106	2,794	38,046
Air Force	Edwards Air Force Base	Edwards AFB	California	852	5,589	152,354
Air Force	Eglin Air Force Base	Valparaiso	Florida	1,198	10,306	116,239

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Eielson Air Force Base	Unknown	Alaska	1,951	7,331	266,104
Air Force	Ellington Field	Houston	Texas	39	518	75,027
Air Force	Ellsworth Air Force Base	Ellsworth AFB	South Dakota	447	4,280	104,362
Air Force	Ewvra Shepherd Field ANG	Martinsburg	West Virginia	63	640	97,797
Air Force	Fairchild Air Force Base	Unknown	Washington	480	4,777	100,411
Air Force	Forbes Field ANG	Topeka	Kansas	36	488	74,625
Air Force	Fort Smith Municipal Airport ANG	Fort Smith	Arkansas	19	418	46,572
Air Force	Fort Wayne International Airport	Fort Wayne	Indiana	40	419	96,623
Air Force	Francis E Warren Air Force Base	Cheyenne	Wyoming	414	3,181	130,072
Air Force	Francis S Gabreski Airport (ANG)	Westhampton Beach	New York	25	363	69,185
Air Force	Fresno Yosemite International	Fresno	California	18	418	42,703
Air Force	Ft Indiantown Gap ANG Station	Annaville	Pennsylvania	15	266	56,962
Air Force	General Mitchell International Apt (ANG)	Milwaukee	Wisconsin	30	362	83,948
Air Force	General Wayne A. Downing Peoria International Airport (ANG)	Peoria	Illinois	30	446	67,238
Air Force	Goodfellow Air Force Base	Unknown	Texas	220	2,469	89,030
Air Force	Grand Forks Air Force Base	Grand Forks AFB	North Dakota	332	2,726	121,861
Air Force	Great Falls IAP ANG	Great Falls	Montana	45	448	100,467
Air Force	Grissom Air Reserve Base	Unknown	Indiana	103	1,049	97,746
Air Force	Gulfport-Biloxi Regional Airport (ANG)	Gulfport	Mississippi	35	613	57,131
Air Force	Hanscom Air Force Base	Bedford	Massachusetts	438	2,555	171,337
Air Force	Harrisburg IAP	Middletown	Pennsylvania	21	330	63,588
Air Force	Hector International Airport (ANG)	Fargo	North Dakota	36	498	72,131
Air Force	Hensley Field Air National Guard Station	Dallas	Texas	18	362	50,602
Air Force	Hickam Air Force Base	Hickam Afbase	Hawaii	31	875	35,920
Air Force	Hill Air Force Base	Unknown	Utah	2,222	12,211	181,930
Air Force	Holloman Air Force Base	Holloman AFB	New Mexico	536	5,243	102,288
Air Force	Homestead Air Reserve Base	Homestead	Florida	73	1,118	64,979
Air Force	Hulman Regional Airport	Terre Haute	Indiana	44	374	117,433
Air Force	Hurlburt Field	Hurlburt Field	Florida	463	4,360	106,288
Air Force	Incirlik Air Base Adana	Adana	Turkey	289	4,876	59,319
Air Force	Jackson International Airport	Flowood	Mississippi	35	544	64,419

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Jacksonville IAP ANG	Jacksonville	Florida	27	442	60,326
Air Force	Jefferson Barracks ANG Station	Unknown	Missouri	11	212	51,137
Air Force	Joe Foss Field ANG	Unknown	South Dakota	32	450	71,367
Air Force	Joint Base Andrews-Naval Air Facility Washington	Andrews AFB	Maryland	540	8,068	66,942
Air Force	Joint Base Elmendorf-Ft Richardson	Unknown	Alaska	1,931	12,327	156,643
Air Force	Joint Base San Antonio -Fort Sam Houston	Fort Sam Houston	Texas	1,580	14,998	105,348
Air Force	Kadena Air Base	Kadena Air Base Okinawa	Japan	1,291	23,660	54,562
Air Force	Keesler Air Force Base	Biloxi	Mississippi	716	7,075	101,270
Air Force	Kelly Field Annex	Lackland AFB	Texas	38	367	104,093
Air Force	Key Field Air National Guard	Meridian	Mississippi	29	414	70,669
Air Force	Kirtland Air Force Base	Kirtland AFB	New Mexico	739	7,551	97,804
Air Force	Klamath Falls Airport-Kingsley Field	Kingsley Field	Oregon	28	489	58,020
Air Force	Kunsan Air Base	Kunsan	South Korea	370	3,909	94,643
Air Force	Lackland Air Force Base	Unknown	Texas	1,994	15,320	130,172
Air Force	Lajes Field	Lajesfield	Portugal	92	2,658	34,795
Air Force	Lambert St Louis IAP ANG	St Louis	Missouri	19	321	58,776
Air Force	Langley Air Force Base	Langley AFB	Virginia	1,127	11,625	96,958
Air Force	Laughlin Air Force Base	Unknown	Texas	133	1,898	69,963
Air Force	Lincoln Municipal Airport (ANG)	Unknown	Nebraska	31	354	88,805
Air Force	Little Rock Air Force Base	Unknown	Arkansas	400	3,759	106,484
Air Force	Los Angeles Air Force Base	El Segundo	California	100	1,182	84,201
Air Force	Louisville International Airport - Standiford Field	Louisville	Kentucky	23	384	59,380
Air Force	Luis Munoz Marin International Airport	Carolina	Puerto Rico	28	475	59,337
Air Force	Luke Air Force Base	Luke AFB	Arizona	259	3,731	69,396
Air Force	Macdill Air Force Base	Unknown	Florida	699	4,965	140,764
Air Force	Malmstrom Air Force Base	Malmstrom AFB	Montana	472	2,995	157,708
Air Force	Mansfield Lahm Airport ANG	Masfield	Ohio	27	341	78,842
Air Force	March Air Reserve Base	Unknown	California	140	2,334	59,771
Air Force	Martin State Airport ANG	Middle River	Maryland	25	422	59,372
Air Force	Maxwell Air Force Base	Maxwell AFB	Alabama	642	5,839	109,994
Air Force	McConnell Air Force Base	Wichita	Kansas	354	3,280	107,910

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Mcentire Joint National Guard Base	Unknown	South Carolina	30	426	70,697
Air Force	Mcghee Tyson Airport	Louisville	Tennessee	77	708	108,634
Air Force	Mcguire Air Force Base	Mcguire AFB	New Jersey	1,358	14,153	95,942
Air Force	Memphis International Airport	Memphis	Tennessee	50	586	86,061
Air Force	Minneapolis-St Paul IAP-Air Reserve Stn	Minneapolis	Minnesota	95	1,189	79,535
Air Force	Minot Air Force Base	Minot AFB	North Dakota	627	3,940	159,185
Air Force	Misawa Air Base	Misawa AFB	Japan	1,290	8,013	161,018
Air Force	Moffett Fld ANG	Moffett Field	California	16	414	38,543
Air Force	Montgomery Regional Airport (ANG) Base	Montgomery	Alabama	31	513	59,819
Air Force	Moody Air Force Base	Moody AFB	Georgia	204	2,849	71,644
Air Force	Moron Air Base	Moran Ab	Spain	24	728	33,324
Air Force	Mountain Home Air Force Base	Mountain Home	Idaho	364	2,905	125,422
Air Force	Nashville International Airport	Unknown	Tennessee	23	471	48,471
Air Force	Nellis Air Force Base	Las Vegas	Nevada	895	8,571	104,400
Air Force	New Orleans NAS ANG	Unknown	Louisiana	24	567	41,972
Air Force	Niagara Falls IAP-Air Reserve Station	Niagara Falls	New York	48	883	53,960
Air Force	North Highlands ANG Station	North Highlands	California	8	133	57,970
Air Force	Offutt Air Force Base	Offutt A.F.T.B.	Nebraska	838	6,260	133,860
Air Force	Osan Air Base	Osan AFB	South Korea	760	7,882	96,431
Air Force	Otis Air National Guard Base	Otis Angb, Mashpee	Massachusetts	67	684	97,341
Air Force	Patrick Air Force Base	Patrick AFB	Florida	820	5,938	138,136
Air Force	Pease International Tradeport	Portsmouth	New Hampshire	33	478	68,523
Air Force	Peterson Air Force Base	Colorado Spgs	Colorado	2,188	7,063	309,761
Air Force	Pittsburgh IAP-Air Reserve Stn	Moon	Pennsylvania	40	540	73,978
Air Force	Pittsburgh International Airport (ANG)	Coraopolis	Pennsylvania	50	450	112,011
Air Force	Portland International Airport	Portland	Oregon	67	813	82,101
Air Force	Quonset State Airport ANG	North Kingstown	Rhode Island	31	400	76,903
Air Force	Raf Alconbury	Cambridge	United Kingdom	120	1,345	89,300
Air Force	Raf Croughton	Unknown	United Kingdom	111	690	160,904
Air Force	Raf Fairford	Fairford	United Kingdom	44	1,336	32,914
Air Force	Raf Lakenheath	Lakenheath	United Kingdom	636	7,879	80,782
Air Force	Raf Mildenhall	Mildenhall	United Kingdom	299	3,111	96,116
Air Force	Ramstein Air Base	Ramstein	Germany	1,108	15,968	69,388

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Randolph Air Force Base	Unknown	Texas	349	4,144	84,173
Air Force	Reno Tahoe International Airport	Reno	Nevada	31	412	75,609
Air Force	Rickenbacker Internation Airport (ANG)	Unknown	Ohio	42	534	78,298
Air Force	Robins Air Force Base	Robins AFB	Georgia	1,659	13,244	125,265
Air Force	Rosecrans Memorial Airport	St. Joseph	Missouri	21	369	57,184
Air Force	Salt Lake City International Airport ANG	Salt Lake City	Utah	46	519	88,913
Air Force	Savannah/Hilton Head International Ap	Garden City	Georgia	42	887	47,409
Air Force	Schenectady County Airport ANG	Scotia	New York	36	428	83,364
Air Force	Schriever Air Force Base	Colorado Spgs	Colorado	334	1,681	198,721
Air Force	Scott Air Force Base	Belleville	Illinois	545	5,376	101,329
Air Force	Selfridge ANG Base	Selfridge ANGB	Michigan	136	1,426	95,259
Air Force	Seymour Johnson Air Force Base	Seymour Johnson AFB	North Carolina	258	3,204	80,635
Air Force	Shaw Air Force Base	Shaw AFB	South Carolina	318	3,378	94,011
Air Force	Sheppard Air Force Base	Wichita Falls	Texas	665	7,665	86,794
Air Force	Sioux Gateway Ap/Col. Bud Day Field(ANG)	Sioux City	Iowa	34	471	72,834
Air Force	Sky Harbor International Airport	Phoneix	Arizona	20	276	72,388
Air Force	Spangdahlem Air Base	Spangdahlem Ab	Germany	462	7,641	60,477
Air Force	Springfield Beckley Municipal Airport	Springfield	Ohio	30	446	66,475
Air Force	Stewart International Airport	Unknown	New York	84	828	100,888
Air Force	Syracuse Hancock Field ANG	Syracuse	New York	40	476	83,034
Air Force	Tinker Air Force Base	Oklahoma City	Oklahoma	3,255	18,560	175,357
Air Force	Toledo Express Airport ANG	Swanton	Ohio	20	351	58,191
Air Force	Travis Air Force Base	Fairfield	California	485	6,305	76,996
Air Force	Tucson International Airport	Tucson	Arizona	42	685	61,768
Air Force	Tulsa International Airport	Tulsa	Oklahoma	34	368	92,772
Air Force	Tyndall Air Force Base	Unknown	Florida	322	4,113	78,260
Air Force	Usaf Academy	Air Force Academy	Colorado	781	6,523	119,732
Air Force	Vance Air Force Base	Enid	Oklahoma	112	1,377	80,975
Air Force	Vandenberg Air Force Base	Lompoc	California	575	4,594	125,188
Air Force	Volk Field	Camp Douglas	Wisconsin	42	671	63,323
Air Force	W K Kellogg Airport	Battle Creek	Michigan	46	426	109,035

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Westover Air Reserve Base	Unknown	Massachusetts	180	1,432	125,446
Air Force	Whiteman Air Force Base	Knob Noster	Missouri	569	3,538	160,863
Air Force	Will Rogers World Airport	Oklahoma City	Oklahoma	24	323	75,006
Air Force	Willow Grove Air Reserve Station	Horsham	Pennsylvania	34	726	46,317
Air Force	Wright Patterson Air Force Base	Wright-Patterson AFB	Ohio	2,268	15,581	145,548
Air Force	Yeager Airport ANG	Unknown	West Virginia	29	285	100,772
Air Force	Yokota Air Base	Yokota AFB	Japan	1,396	10,298	135,547
Air Force	Youngstown-Warren Regional Airport Ars	Vienna	Ohio	72	693	104,251
USMC	CG MCLB Albany GA	Albany	Georgia	285	7,033	40,573
USMC	First MCD Garden City LI NY	Long Island	New York	71	166	430,482
USMC	MARBKS Washington DC	Washington	District Of Columbia	52	623	83,493
USMC	Marforres New Orleans	New Orleans	Louisiana	127	1,624	78,391
USMC	MCAGCC Twentynine Palms CA	Twentynine Palms	California	871	6,515	133,623
USMC	MCAS Beaufort SC	Beaufort	South Carolina	174	2,659	65,366
USMC	MCAS Camp Pendleton	Camp Pendleton	California	47	856	54,645
USMC	MCAS Cherry Point Nc	Cherry Point	North Carolina	661	6,220	106,330
USMC	MCAS Iwakuni JA	FPO	Japan	638	5,443	117,290
USMC	MCAS Miramar	San Diego	California	280	5,446	51,489
USMC	MCAS Yuma Az	Yuma	Arizona	199	2,870	69,290
USMC	MCB Camp Butler JA	FPO	Japan	1,116	17,723	62,955
USMC	MCB Camp Lejeune Nc	Camp Lejeune	North Carolina	2,646	21,762	121,610
USMC	MCB Camp Pendleton CA	Camp Pendleton	California	999	19,488	51,245
USMC	MCB Hawaii Kaneohe Bay	Kaneohe Bay	Hawaii	329	6,343	51,854
USMC	MCB Quantico VA	Quantico	Virginia	970	8,536	113,677
USMC	MCLB Barstow CA	Barstow	California	245	4,625	53,078
USMC	Mcmwtc Bridgeport CA	Bridgeport	California	35	341	102,859
USMC	MCRD Parris Island SC	Parris Island	South Carolina	554	4,213	131,464
USMC	MCRD San Diego CA	San Diego	California	237	2,728	86,937
USMC	Mcsf Blount Island FL	Blount Island	Florida	26	911	28,947
DCMA	DCMA(1)	Carson	California	8	80	98,925
DCMA	DCMA(2)	Bratenahl	Ohio	11	79	139,632
DeCA	Aberdeen Proving Ground	Aberdeen Prov Grnd	Maryland	11	62	171,658
DeCA	Altus Air Force Base	Unknown	Oklahoma	8	58	143,451

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DeCA	Arnold Air Station	Arnold AFS	Tennessee	5	23	202,768
DeCA	Aviano Air Base	Aviano Ab	Italy	11	64	174,185
DeCA	Bangor International Airport (ANG)	Unknown	Maine	5	29	172,690
DeCA	Barksdale Air Force Base	Barksdale AFB	Louisiana	6	104	57,614
DeCA	Beale Air Force Base	Beale AFB	California	19	139	136,031
DeCA	Beale Air Force Base	Beale AFB	California	13	88	149,852
DeCA	Bolling Air Force Base	Unknown	District Of Columbia	11	72	160,048
DeCA	Buckley Air Force Base	Aurora	Colorado	12	77	154,665
DeCA	Camp Casey	Camp Casey	South Korea	4	13	283,871
DeCA	Camp Henry	Taegu	South Korea	5	62	86,052
DeCA	Camp Humphreys	Camp Humphreys	South Korea	4	19	217,792
DeCA	Camp Red Cloud	Uijong Bu	South Korea	2	21	101,026
DeCA	Camp Zama	Sagamihara	Japan	14	368	38,434
DeCA	Cannon Air Force Base	Cannon AFB	New Mexico	10	58	166,209
DeCA	Carlisle Barracks	Carlisle	Pennsylvania	13	83	150,654
DeCA	Cbc Gulfport MS	Gulfport	Mississippi	8	31	262,090
DeCA	Charleston Air Force Base	Unknown	South Carolina	27	150	178,678
DeCA	Columbus Air Force Base	Unknown	Mississippi	3	49	68,150
DeCA	Combat Support Training Center And Camp Parks	Dublin	California	1	8	190,256
DeCA	Comfleact Sasebo JA	Sasebo	Japan	8	44	173,825
DeCA	Comfleact Yokosuka JA	Yokosuka	Japan	14	86	165,577
DeCA	Davis-Monthan Air Force Base	Tucson	Arizona	15	115	130,292
DeCA	Dover Air Force Base	Unknown	Delaware	6	78	77,702
DeCA	Dugway Proving Ground	Dugway	Utah	2	18	125,179
DeCA	Dyess Air Force Base	Abilene	Texas	8	80	104,836
DeCA	Edwards Air Force Base	Edwards AFB	California	7	60	115,104
DeCA	Eglin Air Force Base	Valparaiso	Florida	25	170	146,055
DeCA	Eielson Air Force Base	Unknown	Alaska	9	42	212,772
DeCA	Ellsworth Air Force Base	Ellsworth AFB	South Dakota	11	72	154,689
DeCA	Fairchild Air Force Base	Fairchild AFB	Washington	13	85	148,809
DeCA	Fleet Activities Chinhae Ks	Chinhae	South Korea	1	11	103,628
DeCA	Fort Belvoir	Fort Belvoir	Virginia	19	129	147,061
DeCA	Fort Benning	Columbus	Georgia	16	121	132,313
DeCA	Fort Bliss	El Paso	Texas	29	114	251,421

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Fort Bragg	Fort Bragg	North Carolina	43	214	199,551
DeCA	Fort Buchanan	Fort Buchanan, Catano	Puerto Rico	13	95	140,262
DeCA	Fort Campbell	Fort Campbell	Kentucky	21	121	176,035
DeCA	Fort Carson	Colorado Spgs	Colorado	16	123	130,981
DeCA	Fort Detrick	Frederick	Maryland	13	97	135,177
DeCA	Fort Drum	Fort Drum	New York	14	83	163,599
DeCA	Fort George G Meade	Fort Meade	Maryland	24	118	203,475
DeCA	Fort Gordon	Augusta	Georgia	11	92	117,486
DeCA	Fort Greely	Delta Junction	Alaska	4	25	165,951
DeCA	Fort Hamilton	New York City	New York	9	50	171,752
DeCA	Fort Hood	Killeen	Texas	46	233	197,254
DeCA	Fort Huachuca	Fort Huachuca	Arizona	12	78	161,032
DeCA	Fort Jackson	Columbia	South Carolina	14	130	106,969
DeCA	Fort Knox	Fort Knox	Kentucky	10	122	85,726
DeCA	Fort Leavenworth	Fort Leavenworth	Kansas	12	74	161,004
DeCA	Fort Lee	Fort Lee	Virginia	44	323	136,142
DeCA	Fort Leonard Wood	Fort Leonard Wood	Missouri	13	71	184,276
DeCA	Fort McCoy	Sparta	Wisconsin	3	16	218,210
DeCA	Fort Polk	Fort Polk	Louisiana	10	82	116,049
DeCA	Fort Riley	Fort Riley	Kansas	17	105	165,571
DeCA	Fort Rucker	Fort Rucker	Alabama	10	85	119,062
DeCA	Fort Sill	Fort Sill	Oklahoma	10	102	98,819
DeCA	Fort Stewart	Fort Stewart	Georgia	22	152	147,727
DeCA	Fort Wainwright	Fort Wainwright	Alaska	20	104	190,855
DeCA	Francis E Warren Air Force Base	Cheyenne	Wyoming	9	77	120,425
DeCA	Goodfellow Air Force Base	Unknown	Texas	8	57	141,162
DeCA	Grand Forks Air Force Base	Grand Forks AFB	North Dakota	5	41	109,511
DeCA	Hanscom Air Force Base	Bedford	Massachusetts	11	73	145,052
DeCA	Harrison Village	Indianapolis	Indiana	8	54	146,298
DeCA	Hickam Air Force Base	Hickam Afbase	Hawaii	15	115	131,239
DeCA	Hill Air Force Base	Unknown	Utah	13	87	152,276
DeCA	Holloman Air Force Base	Holloman AFB	New Mexico	9	69	126,371
DeCA	Incirlik Air Base Adana	Adana	Turkey	6	82	68,816
DeCA	Jbphh Pearl Harbor Hawaii	Pearl Harbor	Hawaii	10	98	102,523
DeCA	Jntexpbase Little Creek Fs VA	Norfolk	Virginia	17	100	165,423

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Joint Base Andrews-Naval Air Facility Washington	Andrews AFB	Maryland	16	113	145,305
DeCA	Joint Base Elmendorf-Ft Richardson	Unknown	Alaska	20	105	191,057
DeCA	Joint Base Lewis-Mcchord	Tacoma	Washington	32	253	127,552
DeCA	Joint Base Myer-Henderson Hall	Fort Myer	Virginia	10	74	135,724
DeCA	Joint Base San Antonio -Fort Sam Houston	Fort Sam Houston	Texas	18	104	173,503
DeCA	Kadena Air Base	Kadena Air Base Okinawa	Japan	16	87	178,502
DeCA	Keesler Air Force Base	Biloxi	Mississippi	15	98	155,166
DeCA	Kirtland Air Force Base	Kirtland AFB	New Mexico	15	108	138,367
DeCA	Kunsan Air Base	Kunsan	South Korea	4	16	256,461
DeCA	Lackland Air Force Base	Lackland, AFB	Texas	16	117	140,936
DeCA	Lajes Field	Lajesfield	Portugal	6	58	96,657
DeCA	Langley Air Force Base	Langley AFB	Virginia	29	206	142,591
DeCA	Laughlin Air Force Base	Unknown	Texas	7	75	90,386
DeCA	Little Rock Air Force Base	Unknown	Arkansas	12	100	122,241
DeCA	Los Angeles Air Force Base	El Segundo	California	9	75	115,141
DeCA	Luke Air Force Base	Luke AFB	Arizona	16	102	152,809
DeCA	Macdill Air Force Base	Unknown	Florida	19	171	113,755
DeCA	Malmstrom Air Force Base	Malmstrom AFB	Montana	10	68	153,900
DeCA	March Air Reserve Base	Unknown	California	13	117	107,702
DeCA	Marine Corps Base Quantico VA	Quantico	Virginia	17	121	138,349
DeCA	Maxwell Air Force Base	Maxwell AFB	Alabama	19	153	122,500
DeCA	MCAGCC Twentynine Palms CA	Twentynine Palms	California	7	57	131,635
DeCA	MCAS Cherry Point Nc	Cherry Point	North Carolina	7	59	123,738
DeCA	MCAS Iwakuni JA	Iwakuni	Japan	6	32	197,601
DeCA	MCAS Miramar	San Diego	California	13	91	144,205
DeCA	MCAS Yuma Az	Yuma	Arizona	5	34	141,122
DeCA	MCB Camp Lejeune Nc	Camp Lejeune	North Carolina	17	122	139,612
DeCA	MCB Camp Pendleton CA	Camp Pendleton	California	17	134	125,118
DeCA	MCB Camp S D Butler Okinawa JA	Zukeran	Japan	37	412	89,390
DeCA	MCB Hawaii Kaneohe	Kaneohe	Hawaii	11	77	143,888
DeCA	Mcconnell Air Force Base	Wichita	Kansas	10	56	170,603
DeCA	Mcguire Air Force Base	Mcguire AFB	New Jersey	20	121	166,056
DeCA	MCLB Albany GA	Albany	Georgia	5	37	145,195

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	MCLB Barstow CA	Barstow	California	4	22	193,405
DeCA	MCRD Beaufort Pi SC	Parris Island	South Carolina	4	44	95,115
DeCA	Mcsptact Kansas City Mo	Belton	Missouri	4	24	152,865
DeCA	Minot Air Force Base	Minot AFB	North Dakota	9	56	164,655
DeCA	Misawa Air Base	Misawa AFB	Japan	11	82	130,947
DeCA	Moffett Field (Nasa)	Mountain View	California	3	52	64,233
DeCA	Moody Air Force Base	Moody AFB	Georgia	11	65	164,323
DeCA	Mountain Home Air Force Base	Mountain Home	Idaho	6	54	119,869
DeCA	Naf Atsugi JA	Atsugi	Japan	5	32	164,618
DeCA	Naf El Centro CA	El Centro	California	2	13	169,969
DeCA	NAS Corpus Christi TX	Corpus Christi	Texas	9	46	204,848
DeCA	NAS Fallon NV	Fallon	Nevada	4	40	107,500
DeCA	NAS Jacksonville FL	Jacksonville	Florida	18	88	203,707
DeCA	NAS Jrb Ft Worth TX	Fort Worth	Texas	8	93	90,781
DeCA	NAS Jrb New Orleans LA	Belle Chasse	Louisiana	7	47	145,708
DeCA	NAS Key West FL	Stock Island	Florida	5	21	222,066
DeCA	NAS Kingsville TX	Kingsville	Texas	2	15	164,334
DeCA	NAS Lemoore CA	Lemoore NAS	California	5	44	121,758
DeCA	NAS Meridian MS	Meridian	Mississippi	6	32	174,100
DeCA	NAS Oceana VA	Virginia Beach	Virginia	17	110	154,368
DeCA	NAS Pensacola FL	Pensacola	Florida	12	74	159,583
DeCA	NAS Sigonella IT	Sigonella Sicily	Italy	9	68	128,563
DeCA	NAS Whidbey Island WA	Whidbey Island NAS	Washington	9	66	133,313
DeCA	NAS Whiting Fld Milton FL	Milton	Florida	4	22	194,831
DeCA	National Training Center And Fort Irwin	Fort Irwin	California	7	57	127,345
DeCA	Naval Air Station Pax River	Patuxent River	Maryland	9	56	162,854
DeCA	Naval Base Kitsap Bremerton WA	Bangor	Washington	16	109	147,001
DeCA	Naval Station Great Lakes Il	Great Lakes	Illinois	11	60	178,230
DeCA	Naval Station Newport RI	Newport	Rhode Island	8	46	176,597
DeCA	Naval Support Activity Crane	Crane	Indiana	1	8	149,834
DeCA	Navbase Coronado	San Diego	California	16	124	131,268
DeCA	Navbase Guam	Agana	Guam	28	244	115,548
DeCA	Navbase San Diego CA	San Diego	California	16	128	127,416
DeCA	Navbase Ventura Cty Pt Mugu CA	Point Mugu	California	9	65	144,214
DeCA	Navsta Everett WA	Everett	Washington	10	62	154,436

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Navsta Mayport FL	Jacksonville	Florida	10	71	146,471
DeCA	Navsta Norfolk VA	Norfolk	Virginia	14	79	182,516
DeCA	Navsta Rota SP	Rota	Spain	8	50	159,660
DeCA	Navsubase New London CT	Groton	Connecticut	15	74	208,512
DeCA	Navsuppact Annapolis	Annapolis	Maryland	6	26	227,481
DeCA	Navsuppact Midsouth Memphis TN	Millington	Tennessee	9	61	152,754
DeCA	Navsuppact Naples IT	Naples	Italy	14	85	162,381
DeCA	Navsuppact Norfolk NSY	Portsmouth	Virginia	8	50	158,884
DeCA	NAWS China Lake	China Lake	California	4	24	154,645
DeCA	Nellis Air Force Base	Las Vegas	Nevada	16	130	119,512
DeCA	NSA Anderson	Andersen Ab	Guam	7	122	61,196
DeCA	NSA Saratoga Springs NY	Saratoga Springs	New York	4	22	184,832
DeCA	NSA South Potomac	Dahlgren	Virginia	2	15	150,919
DeCA	NSY Portsmouth	Kittery	Maine	6	32	198,130
DeCA	Offutt Air Force Base	Offutt A.F.T.B.	Nebraska	17	120	144,379
DeCA	Osan Air Base	Osan AFB	South Korea	8	103	74,712
DeCA	Patrick Air Force Base	Patrick AFB	Florida	9	103	90,580
DeCA	Peterson Air Force Base	Colorado Spgs	Colorado	15	102	150,138
DeCA	Picatinny Arsenal	Dover	New Jersey	4	22	173,682
DeCA	Presidio Of Monterey	Monterey	California	11	111	102,486
DeCA	Raf Alconbury	Cambridge	United Kingdom	12	77	155,726
DeCA	Raf Croughton	Unknown	United Kingdom	3	20	157,916
DeCA	Raf Lakenheath	Lakenheath	United Kingdom	12	112	104,147
DeCA	Raf Menwith Hill	Harrogate	United Kingdom	6	34	173,067
DeCA	Raf Mildenhall	Mildenhall	United Kingdom	5	14	328,333
DeCA	Ramstein Air Base	Ramstein	Germany	55	406	134,994
DeCA	Randolph Air Force Base	Unknown	Texas	15	97	157,204
DeCA	Redstone Arsenal	Huntsville	Alabama	12	81	153,115
DeCA	Robins Air Force Base	Robins AFB	Georgia	14	70	195,578
DeCA	Rock Island Arsenal	Rock Island	Illinois	3	33	83,824
DeCA	Schofield Barracks	Wahiawa	Hawaii	13	92	139,505
DeCA	Scott Air Force Base	Belleville	Illinois	18	114	161,405
DeCA	Selfridge ANG Base	Selfridge ANGB	Michigan	7	76	90,060
DeCA	Seymour Johnson Air Force Base	Seymour Johnson AFB	North Carolina	10	66	147,211
DeCA	Shaw Air Force Base	Shaw AFB	South Carolina	9	61	149,100

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Sheppard Air Force Base	Wichita Falls	Texas	10	81	125,920
DeCA	Spangdahlem Air Base	Spangdahlem Ab	Germany	12	107	114,021
DeCA	Subase Kings Bay GA	Kings Bay	Georgia	8	57	137,950
DeCA	Tinker Air Force Base	Oklahoma City	Oklahoma	17	87	192,963
DeCA	Tobyhanna Army Depot	Tobyhanna	Pennsylvania	2	22	101,866
DeCA	Travis Air Force Base	Fairfield	California	17	97	171,503
DeCA	Tyndall Air Force Base	Unknown	Florida	8	76	110,350
DeCA	US Army Garrison Ansbach	Ansbach	Germany	7	81	86,794
DeCA	US Army Garrison Bamberg	Bamberg	Germany	5	47	102,795
DeCA	US Army Garrison Baumholder	Baumholder	Germany	6	32	179,935
DeCA	US Army Garrison Benelux	Brussels	Belgium	12	48	250,166
DeCA	US Army Garrison Grafenwoehr	Grafenwoehr	Germany	20	121	169,639
DeCA	US Army Garrison Heidelberg	Heidelberg	Germany	38	847	44,597
DeCA	US Army Garrison Hohenfels	Hohenfels	Germany	4	38	112,330
DeCA	US Army Garrison Kaiserslautern	Kaiserslautern	Germany	6	52	110,044
DeCA	US Army Garrison Livorno	Livorno	Italy	4	26	156,033
DeCA	US Army Garrison Mannheim	Mannheim	Germany	7	64	110,660
DeCA	US Army Garrison Schinnen	Schinnen	Netherlands	5	24	207,873
DeCA	US Army Garrison Schweinfurt	Schweinfurt	Germany	9	51	170,769
DeCA	US Army Garrison Stuttgart	Stuttgart	Germany	12	88	134,939
DeCA	US Army Garrison Vicenza	Vicenza	Italy	12	55	227,842
DeCA	US Army Garrison Wiesbaden	Wiesbaden	Germany	11	62	174,160
DeCA	Usaf Academy	Air Force Academy	Colorado	9	67	136,990
DeCA	Vance Air Force Base	Enid	Oklahoma	8	34	227,094
DeCA	Vandenberg Air Force Base	Lompoc	California	7	83	83,338
DeCA	West Point Military Reservation	West Point	New York	13	73	171,385
DeCA	White Sands Missile Range	Las Cruces	New Mexico	5	32	155,000
DeCA	Whiteman Air Force Base	Knob Noster	Missouri	9	61	145,426
DeCA	Wright Patterson Air Force Base	Wright-Patterson AFB	Ohio	16	123	130,711
DeCA	Yokota Air Base	Yokota AFB	Japan	24	81	288,919
DeCA	Yongsan Garrison	Seoul	South Korea	0	8	59,318
DeCA	Yongsan Garrison	Seoul	South Korea	17	183	93,184
DeCA	Yuma Proving Ground	Yuma	Arizona	4	23	169,218
DFAS	DFAS Limestone	Limestone	Maine	11	141	77,434
DFAS	DFAS Rome	Rome	New York	24	252	93,506

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DIA	Various Locations	Various	Various	280	1,592	175,879
DLA	Defense Distribution Depot San Joaquin	French Camp	California	226	9,834	23,031
DLA	Defense Distribution Depot Susquehanna	New Cumberland	Pennsylvania	443	7,249	61,118
DLA	Defense Supply Center Columbus	Columbus	Ohio	329	3,684	89,360
DLA	Defense Supply Center Richmond	Richmond	Virginia	262	5,681	46,087
NGA	Various Locations	Various	Various	1,000	5,452	183,602
NSA	Various Locations	Various	Various	3,042	10,304	295,225
WHS	Washington Hqs Service	Pentagon, Arlington	Virginia	1,297	7,469	173,680

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APPENDIX F

HOUSE ARMED SERVICE COMMITTEE LETTER ON DOD'S RENEWABLE ENERGY GOAL

KE SKELTON, MISSOURI, CHAIRMAN
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JOE SESTAK, PENNSYLVANIA
GABRIELLE GIFFORDS, ARIZONA
NEW TSONAGAS, MASSACHUSETTS
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SCOTT MURPHY, NEW YORK
DAN BROWN, OREGON

HOUSE COMMITTEE ON ARMED SERVICES
U.S. House of Representatives
Washington, DC 20515-6035
ONE HUNDRED ELEVENTH CONGRESS

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ERIN C. COAKLEY, STAFF DIRECTOR

May 13, 2010

Dr. Ashton B. Carter
Under Secretary of Defense for Acquisition, Technology & Logistics
3000 Defense Pentagon, 3E673
Washington, DC 20301

Dear Secretary Carter:

We write regarding one of the Department of Defense's (DOD) most aggressive and long term energy goals: to produce or procure 25 percent renewable energy in DOD facilities by 2025. We are aware of concerns of ambiguity surrounding the terms included in the goal, such as "produce," "procure," and "consumes," and elements used in the calculation, such as non-electric energy.

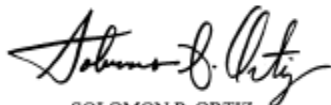
We understand that, as originally conceived by the Department of Defense and prior to codification by section 2852 of the John Warner National Defense Authorization Act for Fiscal Year 2007 (Public Law 109-364), this goal was calculated by dividing the total amount of renewable energy consumed by facilities, including electric and non-electric renewable sources, by the total electricity consumed by those facilities. The committee is aware that, as codified by section 2852 of Public Law 109-364, non-electric renewable energy, such as thermal energy, was excluded from contributing to this goal. The committee supports the inclusion of non-electric renewable energy towards this goal. For this reason, section 2842 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84) amended section 2852 of Public Law 109-364 to include non-electric renewable energy in the definition of renewable energy and in the goal. The committee did not intend for any changes to impact the use of facility electric energy as the denominator for the calculation of this goal.

We support the Department's efforts to comply with the goal to produce or procure renewable energy such that it accounts for 25 percent of the Department's facility electrical consumption by fiscal year 2025. We encourage the Secretary of Defense to promulgate

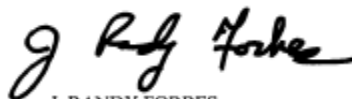
Secretary Carter
May 13, 2010
Page 2

implementing guidance that clarifies the terms and elements of the goal consistent with the goal's original intent and as the Secretary deems appropriate.

Sincerely,



SOLOMON P. ORTIZ
Chairman
Readiness Subcommittee



J. RANDY FORBES
Ranking Member
Readiness Subcommittee

SPO/JRF:er

COMMITTEE ON ARMED SERVICES

U.S. House of Representatives
Washington, DC 20515-6035

OFFICIAL BUSINESS


M.C.

Dr. Ashton B. Carter
Under Secretary of Defense for Acquisition,
Technology & Logistics
3000 Defense Pentagon, 3E673
Washington, DC 20301

VIA COURIER

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APPENDIX G

FY 2012 RENEWABLE ENERGY POTENTIAL

DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	63RD RSC	CA	G	G	G	G	N/A	A	A	A	A	G	8,374	8,260	-	-	3,792
Army	81ST RSC	AL	R	R	A	R	N/A	A	A	A	A	G	3,495	3,065	-	-	3,813
Army	88TH RSC	MN	A	G	G	R	N/A	A	A	A	A	G	24,242	29,890	-	-	9,461
Army	99TH RSC	PA	A	G	G	R	N/A	A	A	A	A	G	13,823	31,816	-	-	6,227
Army	ABERDEEN PG	MD	A	A	A	R	N/A	A	A	A	A	G	145,790	186,564	-	-	10,695
Army	ADELPHI LABORATORY CTR	MD	A	A	A	R	N/A	A	A	A	A	G	1,966	6,789	-	-	888
Army	ALABAMA ARNG	AL	R	R	A	A	N/A	A	A	A	A	G	16	17	-	-	11,594
Army	ALASKA ARNG	AK	G	A	R	G	N/A	A	A	A	A	G	65	76	-	-	864
Army	ANNISTON ARMY DEPOT	AL	R	R	A	R	N/A	G	A	A	A	G	26,300	40,303	26,300	-	26,300
Army	AR ARNG	AR	G	R	A	G	N/A	A	A	A	A	G	-	-			15,815

(G)reen = Favorable | (A)mbler = Limited | (R)ed = Not Favorable | N/A = Not Evaluated
Gthm = Geothermal | GSHP = Ground Source Heat Pump

DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	ARIZONA ARNG	AZ	R	A	R	A	N/A	A	A	A	A	G	34,983	28,756	-	-	3,982
Army	BLUE GRASS ARMY DEPOT	KY	R	R	A	R	N/A	A	A	A	A	G	34,944	49,354	-	-	3,117
Army	CALIFORNIA ARNG	CA	G	G	G	G	N/A	A	A	A	A	G	7,651	7,547	-	-	20,257
Army	Camp Henry	South Korea	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Army	Camp Humphries	South Korea	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Army	CARLISLE BARRACKS	PA	A	G	G	R	N/A	A	A	A	A	G	741	1,705	-	-	756
Army	COLORADO ARNG	CO	A	G	R	R	N/A	A	A	A	A	G	30	30	-	-	2,194
Army	CONNECTICUT ARNG	CT	A	A	A	R	N/A	A	A	A	A	G	87	86	-	-	5,276
Army	CORPUS CHRISTI AD	TX	A	G	A	G	N/A	A	A	A	A	G	-	-	-	-	1,772
Army	DELAWARE ARNG	DE	A	R	G	R	N/A	A	A	A	A	G	331	436	-	-	2,355

(G)reen = Favorable | (A)mber = Limited | (R)ed = Not Favorable | N/A = Not Evaluated
Gthm = Geothermal | GSHP = Ground Source Heat Pump

DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	DESERET CHEMICAL DEPOT	UT	A	R	R	G	N/A	A	A	A	A	G	63,226	51,973	-	-	1,051
Army	DEVENS RFTA	MA	A	A	R	R	N/A	A	A	A	A	G	-	-	-	-	952
Army	DUGWAY PROVING GROUND	UT	A	R	R	G	N/A	A	A	A	A	G	1,155	1,733	436	10,911	1,712
Army	FLORIDA ARNG	FL	A	R	G	R	N/A	A	A	A	A	G	826	568	-	-	7,125
Army	FORT A P HILL	VA	A	A	G	R	N/A	A	A	A	A	G	165,158	162,914	-	-	913
Army	FORT BELVOIR	VA	A	A	G	R	N/A	A	A	A	A	G	25,238	18,789	-	-	6,768
Army	FORT BENNING	GA	A	R	A	R	N/A	A	A	A	A	G	1,386	1,348	58,049	-	11,211
Army	FORT BLISS	TX	A	G	A	G	N/A	A	A	A	A	G	42,747	231,067	-	34,660	11,705
Army	FORT BRAGG	NC	A	A	G	R	N/A	A	A	A	A	G	110,479	11,553	15,276	-	2,000
Army	FORT CAMPBELL	KY	R	R	A	R	N/A	A	A	A	A	G	220,783	286,558	-	-	11,730

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT CARSON	CO	A	G	G	R	N/A	G	A	A	A	G	1,320,497	68,165	23,107	87,292	8,458
Army	FORT DETRICK	MD	A	A	A	R	N/A	A	A	A	A	G	2,701	3,366	-	-	2,590
Army	FORT DRUM	NY	A	A	R	R	N/A	A	A	A	A	G	210,155	483,701	-	-	7,798
Army	FORT EUSTIS	VA	A	G	A	R	N/A	A	A	A	A	G	22,170	26,555	-	-	4,083
Army	FORT GEORGE MEADE	MD	A	A	G	R	N/A	A	A	A	A	G	10,550	12,598	-	-	3,345
Army	FORT GORDON	GA	A	A	A	R	N/A	A	A	A	A	G	1,500	10,000	-	-	50,000
Army	FORT GREELY	AK	A	R	A	R	N/A	A	A	A	A	G	1,926	5,199	-	55,032	852
Army	FORT HAMILTON	NY	R	A	R	A	N/A	A	A	A	A	G	369	696	-	-	482
Army	FORT HOOD	TX	A	G	A	R	N/A	A	A	A	A	G	584,721	1,291,983	-	-	15,771
Army	FORT HUACHUCA	AZ	A	G	A	G	N/A	A	A	A	A	G	105,135	343,173	45,828	17,458	4,166

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT HUNTER LIGGETT	CA	G	A	N/A	G	N/A	A	A	A	A	G	-	-	-	-	837
Army	FORT IRWIN	CA	G	G	G	G	N/A	A	A	A	A	G	577,667	186,009	-	148,396	3,253
Army	FORT JACKSON	SC	G	G	G	G	N/A	A	A	A	A	G	122,386	145,991	-	-	7,177
Army	FORT KNOX	KY	R	R	A	R	N/A	A	A	A	A	G	220,783	275,096	-	-	8,746
Army	FORT LEAVENWORTH	KS	R	R	A	A	N/A	A	A	A	A	G	1,155	12,131	-	-	2,931
Army	FORT LEE	VA	A	G	G	A	N/A	A	A	A	A	G	162,902	1,733	-	-	21,000
Army	FORT LEONARD WOOD	MO	A	A	G	R	N/A	A	A	A	A	G	1,386	83,184	43,646	-	8,195
Army	FORT LEWIS	WA	G	A	G	G	N/A	A	A	A	A	G	-	115,533	27,279	76,380	47,011
Army	FORT MCCLELLAN ARNG	AL	A	A	G	R	N/A	A	A	A	A	G	40,659	48,614	-	-	-
Army	FORT MCCOY	WI	R	R	A	A	N/A	A	A	A	A	G	275,152	368,846	-	-	15,784

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT MCNAIR	VA	R	A	G	R	N/A	A	A	A	A	G	-	-	-	-	1,154
Army	FORT MCPHERSON	GA	N/A	A	G	N/A	N/A	A	A	A	A	G	4,922	4,517	-	-	18,773
Army	FORT MONMOUTH	NJ	A	R	A	R	N/A	A	A	A	A	G	2,278	3,954	-	-	3,798
Army	FORT MONROE	VA	A	A	R	R	N/A	A	A	A	A	G	1,552	1,225	-	-	5,186
Army	FORT MYER	VA	A	A	G	R	N/A	A	A	A	A	G	2,804	2,213	-	-	6,559
Army	FORT POLK	LA	A	A	G	R	N/A	A	A	A	A	G	454,773	523,362	-	-	6,047
Army	FORT RICHARDSON	AK	A	R	A	R	N/A	A	A	A	A	G	67,735	133,629	-	-	6,544
Army	FORT RILEY	KS	R	A	R	A	N/A	A	A	A	A	G	13,450	20,796	-	-	8,621
Army	FORT RUCKER	AL	A	G	G	A	N/A	G	A	A	A	G	29,200	145,506	29,200	-	4,177
Army	FORT SAM HOUSTON	TX	R	R	A	R	N/A	A	A	A	A	G	81,077	94,971	-	-	7,078

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT SILL	OK	A	G	A	G	N/A	A	A	A	A	G	270,630	740,418	-	-	10,979
Army	FORT STEWART	GA	A	A	R	R	N/A	A	A	A	A	G	682,681	612,189	-	-	9,349
Army	FORT WAINWRIGHT	AK	G	R	A	G	N/A	A	A	A	A	G	6,268	9,628	4,365	-	16,621
Army	GEORGIA ARNG	GA	A	A	G	G	N/A	A	A	A	A	G	298	205	-	-	7,263
Army	HAWAII ARNG	HI	G	A	R	G	N/A	A	A	A	A	G	425	314	-	-	2,431
Army	HAWTHORNE AAP (GOCO)	NV	G	R	A	G	N/A	G	G	G	G	G	212,581	434,699	-	54,557	7,271
Army	HOLSTON AAP (GOCO)	TN	R	G	R	A	N/A	A	A	A	A	G	12,317	11,493	-	-	1,313
Army	IDAHO ARNG	ID	A	G	R	R	N/A	A	A	A	A	G	3,398	3,351	-	-	4,880
Army	ILLINOIS ARNG	IL	R	R	R	R	N/A	A	A	A	A	G	110	252	-	-	10,925
Army	INDIANA ARNG	IN	A	R	R	R	N/A	A	A	A	A	G	-	-	-	-	12,002

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	IOWA AAP (GOCO)	IA	R	G	G	R	N/A	A	A	A	A	G	41,383	71,437	-	-	3,016
Army	IOWA ARNG	IA	A	R	A	R	N/A	A	A	A	A	G	144	236	-	-	10,057
Army	KANSAS ARNG	KS	A	G	G	A	N/A	A	A	A	A	G	66	114	-	-	7,517
Army	KENTUCKY ARNG	KY	A	G	G	A	N/A	A	A	A	A	G	911	1,498	-	-	6,208
Army	LAKE CITY AAP (GOCO)	MO	R	G	G	R	N/A	A	A	A	A	G	9,458	20,779	-	-	2,217
Army	LETTERKENNY ARMY DEPOT	PA	A	G	G	R	N/A	A	A	A	A	G	35,556	41,086	-	-	3,784
Army	LIMA JSMC	OHIO	R	R	A	A	N/A	A	A	A	A	G	645	994	-	-	1,240
Army	LOUISIANA ARNG	LA	A	A	G	R	N/A	A	A	A	A	G	-	-	-	-	11,226
Army	MAINE ARNG	ME	A	G	G	R	N/A	A	A	A	A	G	2,003	3,293	-	-	4,299
Army	MARYLAND ARNG	MD	A	R	G	A	N/A	A	A	A	A	G	94	155	-	-	6,037

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	MASSACHUSETTS ARNG	MA	A	R	A	R	N/A	A	A	A	A	G	24	39	-	-	7,693
Army	MCALESTER AAP	OK	A	A	A	R	N/A	A	A	A	A	G	119,906	183,987	-	-	7,957
Army	MICHIGAN ARNG	MI	A	A	A	R	N/A	A	A	A	A	G	1,486	3,420	-	-	14,309
Army	MILAN AAP (GOCO)	TN	A	A	R	R	N/A	A	A	A	A	G	49,883	63,607	-	-	2,718
Army	MINNESOTA ARNG	MN	A	A	R	A	N/A	A	A	A	A	G	2,442	8,994	-	-	11,112
Army	MISSISSIPPI ARNG	MS	A	G	A	R	N/A	A	A	A	A	G	99	97	-	-	17,462
Army	MISSOURI ARNG	MO	A	R	R	G	N/A	A	A	A	A	G	1,339	2,311	-	-	8,655
Army	MOT SUNNY POINT	NC	A	R	A	R	N/A	A	A	A	A	G	26,641	35,038	-	-	251
Army	MT ARNG	MT	R	G	G	A	N/A	A	A	A	A	G	40,779	112,629			4,255
Army	NEBRASKA ARNG	NE	A	A	G	G	N/A	A	A	A	A	G	167	411	-	-	5,482

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	NEVADA ARNG	NV	A	G	A	A	N/A	A	A	A	A	G	1,271	1,045	-	-	2,018
Army	NEW HAMPSHIRE ARNG	NH	A	A	G	R	N/A	A	A	A	A	G	-	-	-	-	2,646
Army	NEW JERSEY ARNG	NJ	G	A	A	G	N/A	A	A	A	A	G	-	-	-	-	6,481
Army	NEW MEXICO ARNG	NM	A	G	R	R	N/A	A	A	A	A	G	38,647	71,161	-	-	3,297
Army	NEW YORK ARNG	NY	A	R	R	R	N/A	A	A	A	A	G	1,442	2,370	-	-	14,633
Army	NORTH CAROLINA ARNG	NC	G	A	R	G	N/A	A	A	A	A	G	89	88	-	-	7,125
Army	NORTH DAKOTA ARNG	ND	A	G	R	R	N/A	A	A	A	A	G	102	188	-	-	4,218
Army	OHIO ARNG	OH	A	G	A	R	N/A	A	A	A	A	G	1,822	4,193	-	-	9,983
Army	OKLAHOMA ARNG	OK	A	R	A	R	N/A	A	A	A	A	G	90	124	-	-	12,974
Army	OREGON ARNG	OR	A	A	G	A	N/A	A	A	A	A	G	2,148	1,695	-	-	7,254

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	PARKS CSTC	CA	A	G	A	R	N/A	A	A	A	A	G	454,045	447,878	-	-	841
Army	PENNSYLVANIA ARNG	PA	A	R	G	A	N/A	A	A	A	A	G	76	100	-	-	18,188
Army	PICATINNY ARSENAL	NJ	G	A	R	G	N/A	G	G	A	G	G	12,367	17,427	-	-	2,389
Army	PINE BLUFF ARSENAL	AR	A	G	G	R	N/A	A	A	A	A	G	30,840	40,561	-	-	2,765
Army	PRESIDIO OF MONTEREY	CA	G	G	G	G	N/A	A	A	A	A	G	5,006	3,527	-	-	2,141
Army	RADFORD AAP (GOCO)	VA	A	G	G	R	N/A	A	A	A	A	G	13,144	14,818	-	-	8,545
Army	R RIVER ARMY DEPOT	TX	G	A	R	G	N/A	A	A	A	A	G	44,853	57,315			5,684
Army	RSTONE ARSENAL	AL	R	R	A	A	N/A	G	A	A	A	G	56,900	89,540	56,900		56,900
Army	RHODE ISLAND ARNG	RI	G	G	G	G	N/A	A	A	A	A	G	655	862	-	-	2,236
Army	ROCK ISLAND ARSENAL	IL	A	A	G	R	N/A	A	A	A	A	G	1,326	3,402	-	-	4,861

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	SCRANTON AAP	PA	A	G	A	G	N/A	A	A	A	A	G	24	40	-	-	298
Army	SIERRA ARMY DEPOT	CA	R	R	A	R	N/A	G	G	A	G	G	538,004	73,630	-	508,115	3,874
Army	SOLDIER SYSTEMS CTR, NATICK	MA	R	R	R	R	N/A	A	A	A	A	G	-	608	-	-	755
Army	SOUTH CAROLINA ARNG	SC	R	G	G	R	N/A	A	A	A	A	G	1,910	1,413	-	-	7,603
Army	SOUTH DAKOTA ARNG	SD	A	G	G	R	N/A	A	A	A	A	G	2	5	-	-	4,460
Army	TENNESSEE ARNG	TN	G	G	G	G	N/A	A	A	A	A	G	1,553	2,552	-	-	11,087
Army	TEXAS ARNG	TX	A	A	R	R	N/A	A	A	A	A	G	9,906	12,214	-	-	12,007
Army	TOBYHANNA ARMY DEPOT	PA	A	R	A	A	N/A	A	A	A	A	G	2,116	5,065	-	-	3,449
Army	TOOELE ARMY DEPOT	UT	R	A	R	R	N/A	A	A	A	A	G	72,878	64,186	-	-	2,014
Army	USAG DETROIT ARSENAL	MI	A	R	R	G	N/A	A	A	A	A	G	527	840	-	-	1,218

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	USAG Grafenwoehr	GERMANY	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Army	USAG HAWAII	HI	R	G	G	R	N/A	A	A	A	A	G	26,574	1,733	-	-	9,842
Army	USAG Kwajalein Atoll	MARSHALL ISLANDS	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Army	USAG Mannheim	GERMANY	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Army	USAG MIAMI	FL	A	G	R	R	N/A	A	A	A	A	G	76	73	-	-	585
Army	USAG Schweinfurt	GERMANY	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Army	UTAH ARNG	UT	A	R	R	R	N/A	A	A	A	A	G	190	188	-	-	1,768
Army	VERMONT ARNG	VT	A	R	R	R	N/A	A	A	A	A	G	1,141	1,876	-	-	3,602
Army	VIRGINIA ARNG	VA	A	A	G	G	N/A	A	A	A	A	G	279	275	-	-	9,019
Army	WASHINGTON ARNG	WA	A	N/A	N/A	R	N/A	A	A	A	A	G	583	958	-	-	4,878

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	WATERVLIET ARSENAL	NY	R	A	G	R	N/A	A	A	A	A	G	289	539	-	-	1,537
Army	WEST POINT MIL RESERVATION	NY	A	G	A	R	N/A	A	A	A	A	G	-	60,415	-	-	5,701
Army	WEST VIRGINIA ARNG	WV	A	G	A	R	N/A	A	A	A	A	G	935	1,844	-	-	7,664
Army	WHITE SANDS MISSILE RANGE	NM	A	R	R	R	N/A	A	A	A	A	G	42,747	24,262	-	65,469	3,153
Army	WISCONSIN ARNG	WI	A	G	R	R	N/A	A	A	A	A	G	83	110	-	-	7,339
Army	WYOMING ARNG	WY	R	A	G	A	N/A	A	A	A	A	G	24,208	19,103	-	-	2,748
Army	Yongsan Garrison	South Korea	A	A	R	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Army	YUMA PROVING GROUND	AZ	R	A	N/A	A	N/A	A	A	A	A	G	57,767	1,733	-	109,115	1,305
Navy	AEGIS TRACEN DAHLGREN VA	VA	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	AFRADBIORSCHINST BETHESDA MD	MD	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	BRDENCLINIC GUAM	GUAM	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	CBC GULFPORT MS	MS	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	COMFLEACT CHINHAE KS	Korea	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	COMFLEACT Okinawa	JAPAN	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	COMFLEACT SASEBO JA	JAPAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	COMFLEACT YOKOSUKA JA	JAPAN	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	COMNAVDIST WASHINGTON DC	DC	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	DOD SCHOOLS GUANTANAMO BAY	Cuba	A	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	FISC YOKOSUKA JA	JAPAN	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	LANTORDCOM DET CHARLESTON SC	SC	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	LANTORDCOM DET EARLE COLTS NECK NJ	NJ	G	A	R	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	LANTORDCOM YORKTOWN VA	VA	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Navy	NAF ATSUGI JA	JAPAN	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	2,467	-	-	-	-
Navy	NAF EL CENTRO CA	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A		-	-	-	-
Navy	NAS BRUNSWICK ME	ME	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS CORPUS CHRISTI TX	TX	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS FALLON NV	NV	A	G	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS JACKSONVILLE FL	FL	G	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS JRB FORT WORTH TX	TX	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS JRB NEW ORLEANS LA	LA	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAS JRB WILLOW GROVE PA	PA	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS KEY WEST FL	FL	N/A	R	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS KINGSVILLE TX	TX	G	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS LEMOORE CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	14,620				
Navy	NAS MERIDIAN MS	MS	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS OCEANA VA	VA	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS PENSACOLA FL	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS SIGONELLA IT	ITALY	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A	2,806				
Navy	NAS WHIDBEY ISLAND WA	WA	R	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS WHITING FIELD MILTON FL	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVAIRENGCEN LAKEHURST NJ	NJ	A	A	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAIRWARCENWPNDIV CHINA LAKE CA	CA	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	70,116,600				
Navy	NAVAMBCARECEN GROTON CT	CT	N/A	A	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAMBCARECEN NEWPORT RI	RI	A	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAVNDEPOT CHERRY PT NC	NC	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAVNDEPOT JACKSONVILLE FL	FL	G	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAVNDEPOT NORTH ISLAND CA	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVBASE CORONADO SAN DIEGO CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	5,356				
Navy	NAVBASE GUAM	GUAM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		26,311			
Navy	NAVBASE POINT LOMA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVBASE SAN DIEGO CA	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVBASE VENTURA COUNTY	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A		4,606			
Navy	NAVCOMTELSTA JACKSONVILLE DET KEY WEST FL	FL	N/A	R	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVCONBRIG CHARLESTON SC	SC	A	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVDECEN SOUTHWEST SAN DIEGO CA	CA	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVDEFACBR LEMOORE CA	CA	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVEODTECHDIV INDIAN HEAD MD	MD	A	A	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC FAR EAST	JAPAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC HAWAII	HI	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC MARIANAS	GUAM	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVFAC MIDWEST	IL	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC SOUTHEAST PENSACOLA DET	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC SOUTHWEST	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC WASHINGTON DC	DC	A	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP CAMP PENDLETON CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP CORPUS CHRISTI TX	TX	R	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP GREAT LAKES IL	IL	A	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP GUANTANAMO BAY CU	Cuba	R	N/A	N/A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP JACKSONVILLE FL	FL	A	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP LEMOORE CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVHOSP NAPLES IT	ITALY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP OAK HARBOR WA	WA	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP OKINAWA JA	JAPAN	A	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP PENSACOLA FL	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP ROTA SP	SPAIN	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP TWENTYNINE PALMS CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP YOKOSUKA JA	JAPAN	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVICP PHILADELPHIA PA	PA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVJNTSERVACT NS TOKYO JA	JAPAN	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVMAG INDIAN ISLAND WA	WA	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVMEDCLINIC ANNAPOLIS MD	MD	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVMEDCLINIC KEY WEST FL	FL	A	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVMEDCLINIC PATUXENT RIVER MD	MD	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVOBSY WASHINGTON DC	DC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRADSTA T JIM CREEK OSO WA	WA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRADTRANFAC SADDLEBUNCH KEYS	FL	A	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESRCOM MIDLANT WASHINGTON DC	VA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESRCOM MIDSOUTH	TN	N/A	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESRCOM MIDWEST	IL	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESRCOM NE NEWPORT RI	RI	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVRESRCOM NORTHWEST EVERETT WA	WA	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESRCOM SOUTHWEST SAN DIEGO CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSHIPREFAC YOKOSUKA JA	JAPAN	R	N/A	N/A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA BREMERTON	WA	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA EVERETT WA	WA	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA GREAT LAKES IL	IL	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA GUANTANAMO BAY CU	Cuba	R	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	4,794				
Navy	NAVSTA NEWPORT RI	RI	G	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A	4,298				
Navy	NAVSTA NORFOLK VA	VA	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,055				
Navy	NAVSTA PEARL HARBOR HI	HI	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A	15,328				

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVSUPPACT BAHRAIN	Bahrain	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSUPPACT MID SOUTH MILLINGTON TN	TN	A	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSUPPACT NAPLES IT	ITALY	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	1,584				
Navy	NAVSUPPACT NEW ORLEANS LA	LA	A	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSUPPACT SOUDA BAY GR	Greece	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	4,152				
Navy	NAVSUPPFAC DIEGO GARCIA	Diego Garcia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCEN CARDEROCKDIV BETHESDA MD	MD	R	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCEN DET BAYVIEW ID	ID	N/A	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCEN DET DANIA FL	FL	G	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCENDIV PORT HUENEME CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVUNSEAWARCEN DET AUTEC ANDROS ISLAND BAHAMAS	AA	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVUNSEAWARCENDIV NEWPORT RI	RI	N/A	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVUSEAWARCENDIV KEYPORT WA	WA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVWPNSTA SEAL BEACH CA	CA	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAWC AD PATUXENT RIVER MD	MD	G	A	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NIOC SUGAR GROVE WV	WV	G	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NOPF WHIDBEY ISLAND	WA	A	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NRL WASHINGTON DC	DC	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA ATHENS	GA	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA CRANE IN	IN	G	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NSA MECHANICSBURG PA	PA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA NORFOLK VA	VA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA ORLANDO FL	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA PANAMA CITY FL	FL	N/A	R	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSD MONTEREY CA	CA	R	G	G	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSU SARATOGA SPRINGS NY	NY	R	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC DET WHITE SANDS NM	NM	N/A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC DIV CORONA CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC DIV DAHLGREN VA	VA	R	A	G	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC DIV INDIAN HEAD MD	MD	R	A	A	A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NSWC PT HUENEME DET SAN DIEGO	CA	R	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWCCD SSES PHILADELPHIA PA	PA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSY PEARL HARBOR HI	HI	A	G	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSY PORTSMOUTH NH	NH	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NTTC Corry Station	FL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NUWC NEWPORT NE DETS	RI	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	PACMISRANFAC HAWAREA BARKING SANDS HI	HI	A	G	R	A	N/A	N/A	N/A	N/A	N/A	N/A	3,071				
Navy	PSNS AND IMF BREMERTON	WA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	SINGAPORE AREA COORDINATOR	Singapore	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	SPAWARSYSCEN SAN DIEGO CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	SUBASE BANGOR WA	WA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	768				
Navy	SWFLANT KINGS BAY GA	GA	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	TRIREFFAC KINGS BAY GA	GA	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	TRITRAFAC KINGS BAY GA	GA	A	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	UNISERUOFHEASCN BETHESDA MD	MD	N/A	A	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	USNA ANNAPOLIS MD	MD	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	WV ABL MINERAL CO	WV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAB LITTLE CREEK VA	VA	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	2,850				
Navy	NAVFAC MID-ATLANTIC	VA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA MAYPORT FL	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVSTA ROTA SP	SPAIN	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	51				
Navy	NAVSUPACT PORTSMOUTH	NH	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A	3,466				
Navy	NSB KINGS BAY GA	GA	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A	2,191				
Navy	NSB NEW LONDON CT	CT	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSY NORFOLK VA	VA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	358				
Air Force	ALTUS AFB	OK	A	A	R	A	N/A	G	A	N/A	N/A	N/A	375	5,231			
Air Force	ANDREWS AFB	MD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			358,669		
Air Force	ARNOLD AFB	TN	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	ASCENSION AAS		N/A	N/A	N/A	N/A	N/A	A	G	N/A	N/A	N/A	894	24,208			
Air Force	AVIANO AIR BASE	Italy	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A	6,875				1,085

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	BARKSDALE AFB	LA	R	R	A	A	N/A	A	R	R	R	R	1,707				
Air Force	BEALE AFB	CA	G	G	G	G	N/A	A	N/A	A	N/A	N/A	6,875		95,645		
Air Force	BOLLING AFB	DC	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	859	-	-	-	-
Air Force	BUCKLEY AFB	CO	G	G	R	G	N/A	G	N/A	N/A	N/A	N/A	8,250				
Air Force	BUCKLEY ANNEX	CO	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	CANNON AFB	NM	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	CAPE CANAVERAL	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A			325,194		
Air Force	Cape Cod AFS	MA	N/A	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A		33,475			
Air Force	Cavalier	ND	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	CHARLESTON AFB	SC	R	R	A	R	N/A	A	N/A	N/A	N/A	G	19,172				7,500

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	CHEYENNE MOUNTAIN AFS	CO	G	G	R	G	N/A	A	N/A	N/A	N/A	N/A	7,472				
Air Force	CLEAR AIR FORCE STATION	AK	R	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	COLUMBUS AFB	MS	R	R	A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	CREECH AFB	NV	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	DAVIS MONTHAN AFB	AZ	G	A	R	G	N/A	G	N/A	A	N/A	N/A	108,106		188,301		
Air Force	DOBBINS AIR RESERVE BASE	GA	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	DOVER AFB	DE	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	DYESS AFB	TX	A	G	A	G	N/A	N/A	N/A	A	N/A	N/A		31,275	168,423		
Air Force	EARECKSON AS (ARWS)	AK	R	A	R	A	N/A	N/A	R	N/A	N/A	N/A					
Air Force	EDWARDS AFB	CA	G	G	G	G	N/A	G	N/A	N/A	N/A	N/A	3,176,913				

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	EGLIN AFB	FL	A	R	G	R	N/A	A	N/A	A	N/A	N/A	29,784	-	672,505	-	-
Air Force	EIELSON AFB	AK	R	A	R	A	N/A	N/A	A	N/A	N/A	N/A	-	7,848	-	-	-
Air Force	ELLSWORTH AFB	SD	A	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	-	32,428	-	-	-
Air Force	ELMENDORF AFB	AK	R	A	R	A	N/A	G	N/A	N/A	N/A	N/A	1,815	196,999	188,301	-	-
Air Force	F E WARREN AFB	WY	R	A	R	A	N/A	N/A	G	N/A	N/A	G	-	47,782	-	-	12,699
Air Force	FAIRCHILD AFB	WA	A	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	GOODFELLOW AFB	TX	A	G	A	G	N/A	A	N/A	A	N/A	N/A	13,761	-	147,951	-	-
Air Force	GRAND FORKS AFB	ND	A	G	A	A	N/A	N/A	N/A	N/A	N/A	G	-	-	-	-	29,009
Air Force	GRISSOM ARB	IN	R	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	GUNTER AFB	AL	R	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	HICKAM AFB	HI	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	HILL AFB	UT	A	R	R	G	N/A	G	N/A	G	N/A	N/A	44	-	469,587	-	-
Air Force	HOLLOMAN AFB	NM	G	G	R	G	N/A	N/A	N/A	N/A	G	N/A	-	-	508,115	-	-
Air Force	HOMESTEAD AFRC	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	64,562	-	-
Air Force	HURLBURT FIELD	FL	A	R	G	R	N/A	A	N/A	N/A	N/A	N/A	6,561	-	16,739	-	-
Air Force	INCIRLIK AB	Turkey	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A	2,579	-	-	-	-
Air Force	IZMIR AIR STATION	Turkey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	KADENA AIR BASE	Japan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	KEESLER AFB	MS	R	R	A	A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	409,034	-	-
Air Force	KIRTLAND AFB	NM	G	G	R	G	N/A	A	A	N/A	N/A	N/A	5,753	313,836	1,275,368	-	1,699

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	KUNSAN AIR BASE	South Korea	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A	154	-	-	-	1,000
Air Force	L G HANSCOM AFB	MA	A	A	R	R	N/A	N/A	A	N/A	N/A	N/A	-	15,692	-	-	-
Air Force	LACKLAND AFB	TX	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	LAJES FIELD	Portugal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	LANGLEY AFB	VA	A	A	G	R	N/A	N/A	N/A	N/A	N/A	A					485
Air Force	LAUGHLIN AFB	TX	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	LITTLE ROCK AFB	AR	R	R	A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	LOS ANGELES AFB	CA	G	G	G	G	N/A	A	N/A	N/A	N/A	N/A	10,028	-	-	-	-
Air Force	LUKE AFB	AZ	G	A	R	G	N/A	A	N/A	N/A	N/A	N/A	111,170	-	-	-	-
Air Force	MACDILL AFB	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	MALMSTROM AFB	MT	A	G	A	G	N/A	N/A	N/A	N/A	N/A	A	-	83,690	-	-	1,092
Air Force	MARCH AIR RESERVE BASE	CA	G	G	G	G	N/A	G	N/A	N/A	N/A	N/A	2,750	-	-	-	-
Air Force	MAXWELL AFB	AL	R	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	MCCHORD AFB	WA	A	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	MCCONNELL AFB	KS	A	G	G	A	N/A	N/A	A	N/A	N/A	G	-	62,767	-	-	590
Air Force	MCGUIRE AFB	NJ	A	A	R	R	N/A	A	N/A	N/A	N/A	N/A	85,641		231,194		
Air Force	MINN-ST PAUL IAP	MN	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	MINOT AFB	ND	A	G	A	A	N/A	N/A	N/A	N/A	N/A	G	-	-	-	-	44,588
Air Force	MISAWA AIR BASE	Japan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	MOLOKAI AFS	HI	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	MOODY AFB	GA	A	R	A	R	N/A	A	N/A	N/A	N/A	G	1,344	-	-	-	969
Air Force	MORON AB	Spain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	MT HOME AFB	ID	R	R	R	A	N/A	A	N/A	N/A	A	N/A	14,968	-	-	78,840	-
Air Force	NELLIS AFB	NV	G	G	R	G	N/A	A	N/A	N/A	A	N/A	227,563	-	-	78,840	-
Air Force	NEW BOSTON	NH	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	NIAGARA FALLS AFRB	NY	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	OFFUTT AFB	NE	A	A	A	A	N/A	N/A	N/A	N/A	N/A	G	-	-	-	-	49,733
Air Force	ONIZUKA AFB	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	OSAN AFB	South Korea	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	PATRICK AFB	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	G	-	-	382,581	-	157

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	PETERSON AFB	CO	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	PILLAR POINT AFS	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	PITTSBURGH IAP	PA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	POPE AFB	NC	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	RAF ALCONBURY	UK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	RAF CROUGHTON	UK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	RAF FAIRFORD	UK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	RAF LAKENHEATH	UK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	RAF MILDENHALL	UK	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A	317	-	-	-	3,664
Air Force	RAMSTEIN AIR BASE	GR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	914	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	RANDOLPH AIR FORCE BASE	TX	A	G	A	G	N/A	A	R	R	R	R	1,591	-	-	-	-
Air Force	ROBINS AFB	GA	A	R	A	R	N/A	N/A	N/A	A	N/A	N/A	-	-	618,705	-	-
Air Force	SANTA YNEZ PEAK	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	SCHRIEVER AFB	CO	G	G	R	G	N/A	A	N/A	N/A	N/A	N/A	137,490	-	-	-	-
Air Force	SCOTT AFB	IL	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	408,884	-	-
Air Force	SEYMOUR JOHNSON AFB	NC	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	SHAW AFB	SC	R	R	A	R	N/A	N/A	N/A	N/A	N/A	G	-	-	-	-	2,317
Air Force	SHEPPARD AFB	TX	A	G	A	G	N/A	A	N/A	N/A	N/A	N/A	20,622	16,739	-	-	-
Air Force	SPANGDAHLEM	GR	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A	6,496	-	-	-	-
Air Force	THULE AIR BASE	Greece	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	TINKER AFB	OK	A	A	R	A	N/A	A	N/A	A	N/A	N/A	1,795	-	584,619	-	-
Air Force	TONOPAH RANGE	NV	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	TRAVIS AFB	CA	G	G	G	G	N/A	A	N/A	N/A	N/A	N/A	203,843	-	-	-	-
Air Force	TYNDALL AFB	FL	A	R	G	R	N/A	N/A	N/A	N/A	N/A	G	48,420	-	392,742	-	17,633
Air Force	U S A F ACADEMY	CO	G	G	R	G	N/A	G	N/A	N/A	N/A	N/A	46,113	-	-	-	-
Air Force	VANCE AFB	OK	A	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	VANDENBERG AFB	CA	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A	72,068	502,137	-	-	-
Air Force	WESTOVER ARB	MA	A	A	R	R	N/A	N/A	N/A	A	N/A	N/A	-	-	14,347	-	-
Air Force	WHITEMAN AFB	MO	A	A	G	R	N/A	N/A	N/A	N/A	N/A	G	-	-	-	-	27,361
Air Force	WRIGHT-PATTERSON AFB	Ohio	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	YOKOTA AB	Japan	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Air Force	YOUNGSTOWN JOINT AIR RESERVE STATION	Ohio	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
Marine Corps	MARBKS WASHINGTON DC	DC	R	N/A	N/A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MARCORRESFOR NEW ORLEANS LA		A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCAGCC TWENTYNINE PALMS	CA	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,630,496				
Marine Corps	MCAS BEAUFORT	SC	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCAS CHERRY POINT	NC	R	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCAS IWAKUNI	Japan	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCAS MIRAMAR	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A			79,268,890		
Marine Corps	MCAS YUMA	AZ	G	A	R	G	N/A	N/A	N/A	N/A	N/A	N/A					

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Marine Corps	MCB CAMP BUTLER	Japan	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCB CAMP LEJEUNE	NC	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,138				
Marine Corps	MCB CAMP PENDLETON	CA	R	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	7,396				
Marine Corps	MCB HAWAII	HI	A	G	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCB QUANTICO	VA	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCLB ALBANY	GA	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCLB BARSTOW	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	7,165,200				
Marine Corps	MCRD PARRIS ISLAND	SC	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Marine Corps	MCRD SAN DIEGO CA	CA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	7,677				
Marine Corps	MCSPTACT KANSAS CITY MO	MO	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DCMA	DCMA (1)	CA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DCMA	DCMA (2)	OH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	ABERDEEN PROVING GROUND	MD	A	A	A	A	N/A	A	R	R	R	R	837	-	-	-	-
DeCA	ALTUS AIR FORCE BASE	OK	N/A	A	R	N/A	N/A	A	R	R	R	R	950	-	-	-	-
DeCA	ANDREWS AIR FORCE BASE	MD	A	N/A	N/A	R	N/A	A	R	R	R	R	1,525	-	-	-	-
DeCA	ARNOLD AIR STATION	TN	N/A	A	A	N/A	N/A	A	R	R	R	R	347	-	-	-	-
DeCA	ARTILLERY KASERNE	Germany	N/A	R	R	N/A	N/A	A	R	R	R	R	122	-	-	-	-
DeCA	ASKREN MANOR FAM HSG	Germany	A	N/A	N/A	R	N/A	A	R	R	R	R	456	-	-	-	-
DeCA	AVIANO AIR BASE	Italy	A	N/A	N/A	R	N/A	A	N/A	N/A	N/A	G	6,875	-	-	-	1,085
DeCA	BANGOR INTERNATIONAL AIRPORT (ANG)	ME	R	A	A	A	N/A	A	R	R	R	R	303	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	BARKSDALE AIR FORCE BASE	LA	N/A	R	A	N/A	N/A	A	R	R	R	R	1,707	-	-	-	-
DeCA	BEALE AIR FORCE BASE	CA	N/A	G	G	N/A	N/A	A	R	R	R	R	1,238	-	-	-	-
DeCA	BITBURG FAMILY HOUSING ANNEX	Germany	A	N/A	N/A	G	N/A	A	R	R	R	R	568	-	-	-	-
DeCA	BOLLING AIR FORCE BASE	DC	A	N/A	N/A	R	N/A	A	R	R	R	R	859	-	-	-	-
DeCA	BUCKLEY AIR FORCE BASE	CO	N/A	G	R	N/A	N/A	A	R	R	R	R	1,157	-	-	-	-
DeCA	CAMP CARROLL	South Korea	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CAMP CASEY	South Korea	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CAMP DARBY	Italy	G	N/A	N/A	G	N/A	A	R	R	R	R	316	-	-	-	-
DeCA	CAMP EDERLE	Italy	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	489	-	-	-	-
DeCA	CAMP HUMPHREYS	South Korea	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	CAMP R CLOUD	South Korea	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CAMP STANLEY	South Korea	G	N/A	N/A	G	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CAMP WALKER	South Korea	A	N/A	N/A	R	N/A	A	R	R	R	R	640	-	-	-	-
DeCA	CAMP ZAMA	Japan	A	N/A	N/A	R	N/A	A	R	R	R	R	116	-	-	-	-
DeCA	CANNON AIR FORCE BASE	NM	R	G	R	R	N/A	A	R	R	R	R	1,132	-	-	-	-
DeCA	CARLISLE BARRACKS	PA	R	G	G	R	N/A	A	R	R	R	R	716	-	-	-	-
DeCA	CBC GULFPORT MS	MS	N/A	R	A	N/A	N/A	A	R	R	R	R	369	-	-	-	-
DeCA	CHARLES E KELLY SPT FACILITY	PA	N/A	G	G	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CHARLESTON AIR FORCE BASE	SC	A	R	A	R	N/A	A	R	R	R	R	1,290	-	-	-	-
DeCA	CHIEVRES AIRBASE	Belgium	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	248	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	COLUMBUS AIR FORCE BASE	MS	R	R	A	R	N/A	A	R	R	R	R	732	-	-	-	-
DeCA	COMFLEACT SASEBO JA	Japan	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	215	-	-	-	-
DeCA	COMFLEACT SASEBO JA	Japan	G	N/A	N/A	G	N/A	A	R	R	R	R	215	-	-	-	-
DeCA	COMFLEACT YOKOSUKA JA	Japan	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	-	-	-	-	-
DeCA	COMFLEACT YOKOSUKA JA	Japan	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	-	-	-	-	-
DeCA	DAHLONEGA	GA	N/A	R	A	N/A	N/A	A	R	R	R	R	43	-	-	-	-
DeCA	DAVIS-MONTHAN AIR FORCE BASE	AZ	A	A	R	R	N/A	A	R	R	R	R	2,576	-	-	-	-
DeCA	DOVER AIR FORCE BASE	DE	A	R	G	G	N/A	A	R	R	R	R	937	-	-	-	-
DeCA	DUGWAY PROVING GROUND	UT	G	R	R	G	N/A	A	R	R	R	R	271	-	-	-	-
DeCA	DYESS AIR FORCE BASE	TX	A	G	A	R	N/A	A	R	R	R	R	1,309	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	EAST CAMP GRAFENWOEHR	Germany	A	N/A	N/A	R	N/A	A	R	R	R	R	128	-	-	-	-
DeCA	EDWARDS AIR FORCE BASE	CA	R	G	G	A	N/A	A	R	R	R	R	1,264	-	-	-	-
DeCA	EGLIN AIR FORCE AUXILIARY FIELD #9	FL	G	R	G	G	N/A	A	R	R	R	R	946	-	-	-	-
DeCA	EGLIN AIR FORCE BASE	FL	G	R	G	G	N/A	A	R	R	R	R	1,597	-	-	-	-
DeCA	EIELSON AIR FORCE BASE	AK	A	A	R	A	N/A	A	R	R	R	R	376	-	-	-	-
DeCA	ELLSWORTH AIR FORCE BASE	SD	A	A	R	G	N/A	A	R	R	R	R	867	-	-	-	-
DeCA	ELMENDORF AIR FORCE BASE	AK	A	A	R	R	N/A	A	R	R	R	R	942	-	-	-	-
DeCA	FAIRCHILD AIR FORCE BASE	WA	A	A	G	R	N/A	A	R	R	R	R	485	-	-	-	-
DeCA	FLEET ACTIVITIES CHINHAE KS	South Korea	A	N/A	N/A	G	N/A	A	R	R	R	R	135	-	-	-	-
DeCA	FORT BELVOIR	VA	A	A	G	G	N/A	A	R	R	R	R	1,732	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT BENJAMIN HARRISON	IN	G	R	A	G	N/A	A	R	R	R	R	646	-	-	-	-
DeCA	FORT BENNING GA	GA	A	R	A	R	N/A	A	R	R	R	R	1,761	-	-	-	-
DeCA	FORT BLISS	TX	A	G	A	R	N/A	A	R	R	R	R	2,748	-	-	-	-
DeCA	FORT BRAGG	NC	N/A	A	G	N/A	N/A	A	R	R	R	R	1,425	-	-	-	-
DeCA	FORT BRAGG	NC	R	A	G	R	N/A	A	R	R	R	R	1,767	-	-	-	-
DeCA	FORT BUCHANAN	Puerto Rico	G	N/A	N/A	G	N/A	A	R	R	R	R	1,705	-	-	-	-
DeCA	FORT CAMPBELL	TN	A	R	R	R	N/A	A	R	R	R	R	1,652	-	-	-	-
DeCA	FORT CARSON	CO	A	G	R	R	N/A	A	R	R	R	R	1,976	-	-	-	-
DeCA	FORT DETRICK	MD	A	A	A	R	N/A	A	R	R	R	R	470	-	-	-	-
DeCA	FORT DRUM	NY	A	G	A	R	N/A	A	R	R	R	R	990	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT EUSTIS	VA	A	A	G	R	N/A	A	R	R	R	R	1,381	-	-	-	-
DeCA	FORT GEORGE G MEADE	MD	A	A	A	R	N/A	A	R	R	R	R	1,411	-	-	-	-
DeCA	FORT GILLEM	GA	R	R	A	A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	FORT GORDON	GA	A	R	A	R	N/A	A	R	R	R	R	1,378	-	-	-	-
DeCA	FORT GREELY	AK	A	A	R	G	N/A	A	R	R	R	R	148	-	-	-	-
DeCA	FORT HAMILTON	NY	A	G	A	G	N/A	A	R	R	R	R	602	-	-	-	-
DeCA	FORT HOOD	TX	G	G	A	G	N/A	A	R	R	R	R	2,101	-	-	-	-
DeCA	FORT HOOD	TX	G	G	A	G	N/A	A	R	R	R	R	1,737	-	-	-	-
DeCA	FORT HUACHUCA	AZ	G	A	R	G	N/A	A	R	R	R	R	1,623	-	-	-	-
DeCA	FORT HUNTER LIGGETT	CA	R	G	G	R	N/A	A	R	R	R	R	117	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT JACKSON	SC	A	R	A	A	N/A	A	R	R	R	R	1,943	-	-	-	-
DeCA	FORT KNOX	KY	A	R	A	R	N/A	A	R	R	R	R	1,457	-	-	-	-
DeCA	FORT LEAVENWORTH	KS	A	G	G	R	N/A	A	R	R	R	R	888	-	-	-	-
DeCA	FORT LEE	VA	A	A	G	R	N/A	A	R	R	R	R	966	-	-	-	-
DeCA	FORT LEONARD WOOD	MO	A	A	G	R	N/A	A	R	R	R	R	1,061	-	-	-	-
DeCA	FORT LEWIS	WA	A	A	G	R	N/A	A	R	R	R	R	628	-	-	-	-
DeCA	FORT MCCOY	WI	A	A	G	R	N/A	A	R	R	R	R	190	-	-	-	-
DeCA	FORT MCPHERSON/GILLEM	GA	A	R	A	R	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	FORT MONMOUTH	NJ	R	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	FORT MYER	VA	A	A	G	A	N/A	A	R	R	R	R	886	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT POLK	LA	R	R	A	R	N/A	A	R	R	R	R	1,232	-	-	-	-
DeCA	FORT RILEY	KS	A	G	G	G	N/A	A	R	R	R	R	1,016	-	-	-	-
DeCA	FORT RUCKER	AL	A	R	A	A	N/A	A	R	R	R	R	1,274	-	-	-	-
DeCA	FORT SAM HOUSTON	TX	A	G	A	R	N/A	A	R	R	R	R	1,717	-	-	-	-
DeCA	FORT SILL	OK	R	A	R	A	N/A	A	R	R	R	R	1,670	-	-	-	-
DeCA	FORT STEWART	GA	A	R	A	G	N/A	A	R	R	R	R	1,554	-	-	-	-
DeCA	FORT WAINWRIGHT	AK	N/A	A	R	N/A	N/A	A	R	R	R	R	937	-	-	-	-
DeCA	FRANCIS E WARREN AIR FORCE BASE	WY	G	A	R	G	N/A	A	R	R	R	R	1,157	-	-	-	-
DeCA	GERMERSHEIM ARMY DEPOT	Germany	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	-	-	-	-	-
DeCA	GOODFELLOW AIR FORCE BASE	TX	A	G	A	A	N/A	A	R	R	R	R	1,025	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	GRAND FORKS AIR FORCE BASE	ND	N/A	G	A	N/A	N/A	A	R	R	R	R	493	-	-	-	-
DeCA	HAINERBERG HSG AND SHOP CTR	Germany	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	555	-	-	-	-
DeCA	HANSCOM AIR FORCE BASE	MA	R	A	R	R	N/A	A	R	R	R	R	879	-	-	-	-
DeCA	HICKAM AIR FORCE BASE	HI	N/A	G	R	N/A	N/A	A	R	R	R	R	2,415	-	-	-	-
DeCA	HILL AIR FORCE BASE	UT	G	R	R	G	N/A	A	R	R	R	R	1,299	-	-	-	-
DeCA	HOHENFELS TNG AREA	Germany	A	N/A	N/A	R	N/A	A	R	R	R	R	343	-	-	-	-
DeCA	HOLLOMAN AIR FORCE BASE	NM	A	G	R	R	N/A	A	R	R	R	R	1,437	-	-	-	-
DeCA	HUNTER ARMY AIRFIELD	GA	N/A	R	A	N/A	N/A	A	R	R	R	R	862	-	-	-	-
DeCA	INCIRLIK AIR BASE ADANA	Turkey	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	904	-	-	-	-
DeCA	IZMIR AIR STATION	Turkey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	KADENA AIR BASE	Japan	G	N/A	N/A	G	N/A	A	R	R	R	R	1,039	-	-	-	-
DeCA	KAPAUN ADMINISTRATION ANX	Germany	G	N/A	N/A	G	N/A	A	R	R	R	R	506	-	-	-	-
DeCA	KATTERBACH KASERNE	Germany	R	N/A	N/A	R	N/A	A	R	R	R	R	389	-	-	-	-
DeCA	KEESLER AIR FORCE BASE	MS	A	R	A	R	N/A	A	R	R	R	R	477	-	-	-	-
DeCA	KELLEY BARRACKS-GERGE44F	Germany	A	N/A	N/A	R	N/A	A	R	R	R	R	163	-	-	-	-
DeCA	KIRTLAND AIR FORCE BASE	NM	A	G	R	G	N/A	A	R	R	R	R	2,575	-	-	-	-
DeCA	KUNSAN AIR BASE	South Korea	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	193	-	-	-	-
DeCA	KURE PIER 6	Japan	A	N/A	N/A	R	N/A	A	R	R	R	R	20	-	-	-	-
DeCA	LACKLAND AIR FORCE BASE	TX	A	G	A	R	N/A	A	R	R	R	R	1,919	-	-	-	-
DeCA	LAJES FIELD	Portugal	A	N/A	N/A	R	N/A	A	R	R	R	R	866	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	LANGLEY AIR FORCE BASE	VA	G	A	G	G	N/A	A	R	R	R	R	1,542	-	-	-	-
DeCA	LAUGHLIN AIR FORCE BASE	TX	A	G	A	R	N/A	A	R	R	R	R	1,231	-	-	-	-
DeCA	LITTLE ROCK AIR FORCE BASE	AR	G	R	A	G	N/A	A	R	R	R	R	1,495	-	-	-	-
DeCA	LOS ANGELES AIR FORCE BASE	CA	A	G	G	R	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	LUKE AIR FORCE BASE	AZ	A	A	R	G	N/A	A	R	R	R	R	2,441	-	-	-	-
DeCA	MACDILL AIR FORCE BASE	FL	N/A	R	G	N/A	N/A	A	R	R	R	R	2,553	-	-	-	-
DeCA	MALMSTROM AIR FORCE BASE	MT	G	G	A	G	N/A	A	R	R	R	R	815	-	-	-	-
DeCA	MARCH AIR RESERVE BASE	CA	A	G	G	R	N/A	A	R	R	R	R	2,090	-	-	-	-
DeCA	MARINE CORPS BASE QUANTICO VA	VA	N/A	A	G	N/A	N/A	A	R	R	R	R	1,052	-	-	-	-
DeCA	MAXWELL AIR FORCE BASE	AL	A	R	A	G	N/A	A	R	R	R	R	1,300	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MAXWELL AIR FORCE BASE GUNTER ANNEX	AL	A	R	A	R	N/A	A	R	R	R	R	987	-	-	-	-
DeCA	MCAGCC TWENTYNINE PALMS CA	CA	G	G	G	G	N/A	A	R	R	R	R	1,357	-	-	-	-
DeCA	MCAS CHERRY POINT NC	NC	G	A	G	G	N/A	A	R	R	R	R	886	-	-	-	-
DeCA	MCAS IWAKUNI JA	Japan	A	N/A	N/A	R	N/A	A	R	R	R	R	309	-	-	-	-
DeCA	MCAS MIRAMAR	CA	A	G	G	R	N/A	A	R	R	R	R	1,900	-	-	-	-
DeCA	MCAS YUMA AZ	AZ	A	A	R	R	N/A	A	R	R	R	R	807	-	-	-	-
DeCA	MCB CAMP LEJEUNE NC	NC	G	A	G	G	N/A	A	R	R	R	R	1,130	-	-	-	-
DeCA	MCB CAMP LEJEUNE NC	NC	A	A	G	R	N/A	A	R	R	R	R	1,130	-	-	-	-
DeCA	MCB CAMP PENDLETON CA	CA	N/A	G	G	N/A	N/A	A	R	R	R	R	1,863	-	-	-	-
DeCA	MCB CAMP PENDLETON CA	CA	N/A	G	G	N/A	N/A	A	R	R	R	R	1,863	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	339	-	-	-	-
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	339	-	-	-	-
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	A	N/A	N/A	R	N/A	A	R	R	R	R	339	-	-	-	-
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	339	-	-	-	-
DeCA	MCB HAWAII KANEOHE	HI	N/A	G	R	N/A	N/A	A	R	R	R	R	1,379	-	-	-	-
DeCA	MCCHORD AIR FORCE BASE	WA	A	A	G	A	N/A	A	R	R	R	R	883	-	-	-	-
DeCA	MCCLELLAN AIR FORCE BASE	CA	A	G	G	G	N/A	A	R	R	R	R	1,040	-	-	-	-
DeCA	MCCLELLAN AIR FORCE BASE	CA	A	G	G	R	N/A	A	R	R	R	R	1,040	-	-	-	-
DeCA	MCCONNELL AIR FORCE BASE	KS	R	G	G	A	N/A	A	R	R	R	R	835	-	-	-	-
DeCA	MCGUIRE AIR FORCE BASE	NJ	R	A	R	R	N/A	A	R	R	R	R	1,231	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MCLB ALBANY GA	GA	R	R	A	A	N/A	A	R	R	R	R	603	-	-	-	-
DeCA	MCLB BARSTOW CA	CA	G	G	G	G	N/A	A	R	R	R	R	395	-	-	-	-
DeCA	MCRD/BEAUFORT PI, SC	SC	A	R	A	R	N/A	A	R	R	R	R	661	-	-	-	-
DeCA	MCSPTACT KANSAS CITY MO	MO	A	A	G	R	N/A	A	R	R	R	R	352	-	-	-	-
DeCA	MENWITH HILL	United Kingdom	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	205	-	-	-	-
DeCA	MINOT AIR FORCE BASE	ND	N/A	G	A	N/A	N/A	A	R	R	R	R	675	-	-	-	-
DeCA	MISAWA AIR BASE	Japan	G	N/A	N/A	G	N/A	A	R	R	R	R	739	-	-	-	-
DeCA	MOFFETT FIELD	CA	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	854	-	-	-	-
DeCA	MOODY AIR FORCE BASE	GA	N/A	R	A	N/A	N/A	A	R	R	R	R	657	-	-	-	-
DeCA	MOUNTAIN HOME AIR FORCE BASE	ID	G	R	R	G	N/A	A	R	R	R	R	800	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAF ATSUGI JA	Japan	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	383	-	-	-	-
DeCA	NAF EL CENTRO CA	CA	R	G	G	A	N/A	A	R	R	R	R	232	-	-	-	-
DeCA	NAS BRUNSWICK ME	ME	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	NAS CORPUS CHRISTI TX	TX	A	G	A	R	N/A	A	R	R	R	R	552	-	-	-	-
DeCA	NAS FALLON NV	NV	A	G	R	R	N/A	A	R	R	R	R	725	-	-	-	-
DeCA	NAS JACKSONVILLE FL	FL	N/A	R	G	N/A	N/A	A	R	R	R	R	1,318	-	-	-	-
DeCA	NAS JRB FT WORTH TX	TX	N/A	G	A	N/A	N/A	A	R	R	R	R	1,387	-	-	-	-
DeCA	NAS KEY WEST FL	FL	A	R	G	G	N/A	A	R	R	R	R	318	-	-	-	-
DeCA	NAS KINGSVILLE TX	TX	N/A	G	A	N/A	N/A	A	R	R	R	R	176	-	-	-	-
DeCA	NAS LEMOORE CA	CA	R	G	G	A	N/A	A	R	R	R	R	792	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAS MERIDIAN MS	MS	A	R	A	A	N/A	A	R	R	R	R	378	-	-	-	-
DeCA	NAS NORTH ISLAND SAN DIEGO CA	CA	N/A	G	G	N/A	N/A	A	R	R	R	R	1,404	-	-	-	-
DeCA	NAS NORTH ISLAND SAN DIEGO CA	CA	A	G	G	A	N/A	A	R	R	R	R	1,404	-	-	-	-
DeCA	NAS OCEANA VA	VA	N/A	A	G	N/A	N/A	A	R	R	R	R	1,643	-	-	-	-
DeCA	NAS PATUXENT RIVER MD	MD	A	A	A	R	N/A	A	R	R	R	R	668	-	-	-	-
DeCA	NAS PENSACOLA FL	FL	G	R	G	G	N/A	A	R	R	R	R	1,103	-	-	-	-
DeCA	NAS SIGONELLA IT	Italy	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	773	-	-	-	-
DeCA	NAS WHIDBEY ISLAND WA	WA	A	A	G	R	N/A	A	R	R	R	R	395	-	-	-	-
DeCA	NAS WHITING FLD MILTON FL	FL	A	R	G	R	N/A	A	R	R	R	R	328	-	-	-	-
DeCA	NATIONAL TRAINING CENTER AND FORT IRWIN	CA	R	G	G	R	N/A	A	R	R	R	R	1,351	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAVAL BASE KITSAP BREMERSON WA	WA	G	A	G	G	N/A	A	R	R	R	R	457	-	-	-	-
DeCA	NAVAL BASE KITSAP BREMERSON WA	WA	G	A	G	G	N/A	A	R	R	R	R	457	-	-	-	-
DeCA	NAVAL STATION GREAT LAKES IL	IL	N/A	G	G	N/A	N/A	A	R	R	R	R	716	-	-	-	-
DeCA	NAVAL STATION NEWPORT RI	RI	G	R	R	G	N/A	A	R	R	R	R	385	-	-	-	-
DeCA	NAVAL SUPPORT ACTIVITY ATHENS	GA	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	NAVAL SUPPORT ACTIVITY CRANE	IN	G	R	A	G	N/A	A	R	R	R	R	97	-	-	-	-
DeCA	NAVAL SUPPORT ACTIVITY WASH	MD	A	A	A	R	N/A	A	R	R	R	R	347	-	-	-	-
DeCA	NAVAL WEAPONS STATION CHASN	SC	N/A	R	A	N/A	N/A	A	R	R	R	R	952	-	-	-	-
DeCA	NAVBASE GUAM	Guam	R	N/A	N/A	A	N/A	A	R	R	R	R	1,021	-	-	-	-
DeCA	NAVBASE GUAM	Guam	R	N/A	N/A	R	N/A	A	R	R	R	R	1,021	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAVBASE VENTURA CTY PT MUGU CA	CA	A	G	G	R	N/A	A	R	R	R	R	1,161	-	-	-	-
DeCA	NAVPHIBASE LITTLE CREEK VA	VA	N/A	A	G	N/A	N/A	A	R	R	R	R	1,200	-	-	-	-
DeCA	NAVSTA EVERETT WA	WA	N/A	A	G	N/A	N/A	A	R	R	R	R	361	-	-	-	-
DeCA	NAVSTA MAYPORT FL	FL	G	R	G	G	N/A	A	R	R	R	R	1,062	-	-	-	-
DeCA	NAVSTA NORFOLK VA	VA	A	A	G	R	N/A	A	R	R	R	R	1,175	-	-	-	-
DeCA	NAVSTA PEARL HARBOR HI	HI	G	G	R	G	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	NAVSTA ROTA SP	Spain	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	792	-	-	-	-
DeCA	NAVSTA SAN DIEGO CA	CA	A	G	G	R	N/A	A	R	R	R	R	2,098	-	-	-	-
DeCA	NAVSUBASE NEW LONDON CT	NY	A	G	A	R	N/A	A	R	R	R	R	337	-	-	-	-
DeCA	NAVSUBASE NEW LONDON CT	CT	A	A	A	R	N/A	A	R	R	R	R	337	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAVSUPPACT MIDSOUTH MEMPHIS TN	TN	G	R	R	G	N/A	A	R	R	R	R	732	-	-	-	-
DeCA	NAVSUPPACT NAPLES IT	Italy	A	N/A	N/A	R	N/A	A	R	R	R	R	891	-	-	-	-
DeCA	NAVSUPPACT NORFOLK NSY	VA	A	A	G	R	N/A	A	R	R	R	R	746	-	-	-	-
DeCA	NAVSUPPU SARATOGA SPRINGS NY	NY	N/A	G	A	N/A	N/A	A	R	R	R	R	240	-	-	-	-
DeCA	NAWCADLKE NON-NIF LAKEHURST NJ	NJ	A	A	R	G	N/A	A	R	R	R	R	220	-	-	-	-
DeCA	NAWS CHINA LAKE	CA	R	G	G	A	N/A	A	R	R	R	R	506	-	-	-	-
DeCA	NELLIS AIR FORCE BASE	NV	R	G	R	A	N/A	A	R	R	R	R	2,718	-	-	-	-
DeCA	NSA ANDERSON	Guam	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	1,831	-	-	-	-
DeCA	NSA NEW ORLEANS LA	LA	A	R	A	R	N/A	A	R	R	R	R	557	-	-	-	-
DeCA	NSA SOUTH POTOMAC	VA	N/A	A	G	N/A	N/A	A	R	R	R	R	184	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NSY PORTSMOUTH	NH	N/A	R	R	N/A	N/A	A	R	R	R	R	338	-	-	-	-
DeCA	OFFUTT AIR FORCE BASE	NE	G	A	A	G	N/A	A	R	R	R	R	1,787	-	-	-	-
DeCA	ORD MILITARY COMMUNITY	CA	N/A	G	G	N/A	N/A	A	R	R	R	R	1,830	-	-	-	-
DeCA	OSAN AIR BASE	South Korea	R	N/A	N/A	R	N/A	A	R	R	R	R	1,232	-	-	-	-
DeCA	PANZER KASERNE-GERGE643	Germany	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	47	-	-	-	-
DeCA	PATCH BARRACKS	Germany	A	N/A	N/A	R	N/A	A	R	R	R	R	577	-	-	-	-
DeCA	PATRICK AIR FORCE BASE	FL	G	R	G	G	N/A	A	R	R	R	R	1,534	-	-	-	-
DeCA	PATRICK HENRY VILLAGE FAM HSG	Germany	A	N/A	N/A	G	N/A	A	R	R	R	R	521	-	-	-	-
DeCA	PETERSON AIR FORCE BASE	CO	A	G	R	R	N/A	A	R	R	R	R	1,529	-	-	-	-
DeCA	PICATINNY ARSENAL	NJ	A	A	R	R	N/A	A	R	R	R	R	296	-	-	-	-

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			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	RAF ALCONBURY	United Kingdom	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	RAF CROUGHTON	United Kingdom	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	RAF FAIRFORD	United Kingdom	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	RAF LAKENHEATH	United Kingdom	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DeCA	RAF MILDENHALL	United Kingdom	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A	317	-	-	-	3,664
DeCA	RAMSTEIN AIR BASE	Germany	A	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A	914	-	-	-	-
DeCA	RAMSTEIN AIR BASE	Germany	R	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	914	-	-	-	-
DeCA	RAMSTEIN STORAGE ANNEX	Germany	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	1,593	-	-	-	-
DeCA	RANDOLPH AIR FORCE BASE	TX	A	G	A	R	N/A	A	R	R	R	R	1,591	-	-	-	-
DeCA	RSTONE ARSENAL	AL	A	R	A	R	N/A	A	R	R	R	R	1,209	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	REED WALTER AMC FOREST GLEN	DC	A	N/A	N/A	G	N/A	A	R	R	R	R	693	-	-	-	-
DeCA	ROBINS AIR FORCE BASE	GA	N/A	R	A	N/A	N/A	A	R	R	R	R	1,214	-	-	-	-
DeCA	ROCK ISLAND ARSENAL	IL	N/A	G	G	N/A	N/A	A	R	R	R	R	398	-	-	-	-
DeCA	SAGAMI GENERAL DEPOT	Japan	R	N/A	N/A	A	N/A	A	R	R	R	R	1,887	-	-	-	-
DeCA	SAGAMI GENERAL DEPOT	Japan	G	N/A	N/A	G	N/A	A	R	R	R	R	1,887	-	-	-	-
DeCA	SAGAMIHARA FAMILY HOUSING AREA	Japan	G	N/A	N/A	G	N/A	A	R	R	R	R	602	-	-	-	-
DeCA	SCHINNEN EMMA MINE	Netherlands	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	144	-	-	-	-
DeCA	SCHOFIELD BARRACKS	HI	A	G	R	R	N/A	A	R	R	R	R	1,649	-	-	-	-
DeCA	SCOTT AIR FORCE BASE	IL	N/A	G	G	N/A	N/A	A	R	R	R	R	1,359	-	-	-	-
DeCA	SEMBACH ADMIN ANNEX (WING HQ)	Germany	R	N/A	N/A	R	N/A	A	R	R	R	R	469	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	SEYMOUR JOHNSON AIR FORCE BASE	NC	A	A	G	G	N/A	A	R	R	R	R	981	-	-	-	-
DeCA	SHAW AIR FORCE BASE	SC	N/A	R	A	N/A	N/A	A	R	R	R	R	905	-	-	-	-
DeCA	SHEPPARD AIR FORCE BASE	TX	A	G	A	G	N/A	A	R	R	R	R	1,206	-	-	-	-
DeCA	SMITH BARRACKS	Germany	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	286	-	-	-	-
DeCA	SOUTH CAMP VILSECK	Germany	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	465	-	-	-	-
DeCA	SPANGDAHLEM AIR BASE	Germany	A	N/A	N/A	A	N/A	A	R	R	R	R	228	-	-	-	-
DeCA	STORCK BARRACKS	Germany	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	338	-	-	-	-
DeCA	SUBASE KINGS BAY GA	GA	G	R	A	G	N/A	A	R	R	R	R	785	-	-	-	-
DeCA	SULLIVAN BARRACKS	Germany	R	N/A	N/A	R	N/A	A	R	R	R	R	575	-	-	-	-
DeCA	TINKER AIR FORCE BASE	OK	G	A	R	G	N/A	A	R	R	R	R	1,301	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	TOBYHANNA ARMY DEPOT	PA	G	G	G	G	N/A	A	R	R	R	R	263	-	-	-	-
DeCA	TRAVIS AIR FORCE BASE	CA	A	G	G	R	N/A	A	R	R	R	R	1,442	-	-	-	-
DeCA	TYNDALL AIR FORCE BASE	FL	A	R	G	A	N/A	A	R	R	R	R	1,141	-	-	-	-
DeCA	US ARMY GARRISON MICHIGAN (SELFREDGE)	MI	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	906	-	-	-	-
DeCA	USAF ACADEMY	CO	G	G	R	G	N/A	A	R	R	R	R	997	-	-	-	-
DeCA	VANCE AIR FORCE BASE	OK	N/A	A	R	N/A	N/A	A	R	R	R	R	513	-	-	-	-
DeCA	VANDENBERG AIR FORCE BASE	CA	N/A	G	G	N/A	N/A	A	R	R	R	R	1,245	-	-	-	-
DeCA	VOGELWEH FAMILY HOUSING ANNEX	Germany	A	N/A	N/A	R	N/A	A	R	R	R	R	525	-	-	-	-
DeCA	WARNER BARRACKS	Germany	A	N/A	N/A	G	N/A	A	R	R	R	R	420	-	-	-	-
DeCA	WEST POINT MIL RESERVATION	NY	G	G	A	G	N/A	A	R	R	R	R	875	-	-	-	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	WHITE SANDS MISSILE RANGE NM	NM	A	G	R	R	N/A	A	R	R	R	R	765	-	-	-	-
DeCA	WHITEMAN AIR FORCE BASE	MO	N/A	A	G	N/A	N/A	A	R	R	R	R	726	-	-	-	-
DeCA	WRIGHT PATTERSON AIR FORCE BASE	OH	N/A	R	G	N/A	N/A	A	R	R	R	R	1,471	-	-	-	-
DeCA	YOKOTA AIR BASE	Japan	G	N/A	N/A	G	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	YONGSAN GARRISON	South Korea	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	YUMA PROVING GROUND	AZ	A	A	R	R	N/A	A	R	R	R	R	807	-	-	-	-
DFAS	DFAS Limestone	ME	G	A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DFAS	DFAS Rome	NY	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	-	-
DIA	Various Locations	NA	N/A	N/A	N/A	N/A	N/A	G	R	R	R	A	20,000	-	-	-	160
DLA	DLA Aviation	VA	A	A	G	R	N/A	G	G	G	G	G	173,357	-	260,035	-	433,392

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DLA	DLA Disposition Services	MI	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
DLA	DLA Distribution - Mechanicsburg	PA	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
DLA	DLA Distribution - San Joaquin	CA	G	G	G	G	N/A	G	G	G	G	G	349,703	38,856	-	-	388,559
DLA	DLA Distribution - Susquehanna	PA	A	G	G	R	N/A	G	G	G	G	G	179,335	-	269,002	-	448,337
DLA	DLA Europe & Africa	Germany	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
DLA	DLA HQC - Fort Belvoir	VA	A	A	G	R	N/A	G	G	G	G	G	173,357	-	260,035	-	433,392
DLA	DLA Land and Maritime	Ohio	A	R	G	R	N/A	G	G	G	G	G	245,091	-	367,636	-	612,727
DLA	DLA Pacific	HI	A	G	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
DLA	DLA Troop Support	PA	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
NGA	Various Locations	NA	N/A	N/A	N/A	N/A	N/A	G	A	R	G	R	1	-	-	0	-

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DoD Component	Installation	State / Country	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
NSA	Various Locations	NA	R	G	G	R	N/A	G	R	R	R	G	-	-	-	-	-
WHS	Court of Military Appeals	DC	N/A	N/A	N/A	N/A	N/A	G	A	R	R	A	-	-	-	-	-
WHS	Hybla Valley	VA	N/A	N/A	N/A	N/A	N/A	G	A	R	R	A	-	-	-	-	-
WHS	Washington Headquarters	VA	A	A	G	R	N/A	G	A	A	R	A	-	-	-	-	-

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APPENDIX H

LIST OF ENERGY PROJECTS FUNDED BY APPROPRIATIONS AND LIST OF NON-GOVERNMENTAL THIRD PARTY FUNDED ENERGY PROJECTS

LIST OF ENERGY PROJECTS FUNDED BY APPROPRIATIONS

Project	Estimated Financial Obligation (\$000s)
ARMY	113,327
Energy Efficiency	111,796
15001 Kalaeloa: HVAC Replacement	803
15001 Kalaeloa: Occupancy Sensors	150
15891 Pearl City: HVAC	450
15993 Waiawa: EMCS & VAVs	105
15a20 Ft Ruger: Exterior LED Fixtures	60
15a90 Wahiawa: HVAC Replacement	1,800
63rd RSC: Lighting and Insulation Upgrades in CA, NV, and AR	3,000
88th RSC: Lighting And Insulation Upgrades In WI, MI, IN, IL	3,012
AASF: Lighting Retrofit	7
Abilene Armory (50/50): Lighting And Occupancy Switch Retrofits	19
Akron: Window/Doors Design Only	12
Albany AASF #2: HVAC	650
Anniston Army Depot: Solar Water Heaters	59
Augusta Armory (50/50): Lighting And Occupancy Switch Retrofits	18
AVCRAD: Replace Rooftop Unit	21
Barrigada: Chillers Retrofit	390
Blackstone Armory: Boiler Replacment	141
Blackstone Armory: Controls/EMS Upgrade	143
Blackstone Armory: Lighting Retrofit	38
Blackstone Armory: Water Conservation/Upgrade	4
Brookings FMS: Lighting, DDC Controls, HVAC	19
Brookpark: Armory HVAC Renovation, Window/Doors Design Only	25
Buckley Air Force Base: De-Stratification Fans Installation To Reduce Heat Demand In AASF (Bldg. 1510) Hangars.	145
Camp Bowie: Lighting Replacement	24
Camp Carroll: FY12 QUTM Replace 5 Bldg Fuel Heating System To Natural Gas At Carroll	554
Camp Casey: FY12 QUTM-Repair Fluorescent Lighting Fixture By Replacing Existing Lamp With LED & De-Lamping At Camp Casey, Phase 1	457
Camp Casey: FY12 QUTM-Replace Showerhead With Low-Flow Reducers, Camp Casey	176
Camp Clark Multiple Bldgs: Replace Wallpacks With LED	29

Project	Estimated Financial Obligation (\$000s)
Camp Crowder Bldg 890: Replace HVAC Units	6
Camp Grafton Barracks Complex: Upgrade Bas Controls	50
Camp Grafton CSMS Bldg 5800: Dimmer With Motion Sensors On Org Parking Lot Lights Which Allows Lights To Run At 50% Power Unless Activated.	98
Camp Hovey: FY12 QUTM-Replace Showerhead With Low-Flow Reducers, Camp Hovey	88
Camp Humphreys: FY12 QUTM, Install Daylight System At S-809, Aircraft Maintenance Hangar	268
Camp Humphreys: FY12 QUTM, Install Daylight System At S-857, Aircraft Maintenance Hangar	119
Camp Humphreys: FY12 QUTM, Install Daylight System At S-860, Aircraft Maintenance Hangar	245
Camp Humphreys: FY12 QUTM, Install Natural Daylighting For Bldg 868	186
Camp Humphreys: FY12 QUTM, Install Natural Lighting For Bldg 1860	245
Camp Humphreys: FY12 QUTM, Replace Street Light Fixtures With LED Type, West Area, Phase 2	596
Camp Mabry: Lighting Replacement	10
Camp Red Cloud: FY12 QUTM-Replace Showerhead With Low-Flow Reducers, Camp Red Cloud	53
Camp Stanley: FY12 QUTM-Replace Showerhead With Low-Flow Reducers, Camp Stanley	60
Camp Zama: FY12 QUTM Improve Heating Control System To Save Energy	110
Cape Girardeau FMS: Replace Shop Furnances	14
Carthage Armory: Whole Bldg Lighting Replacement	43
Chamberlain FMS: Lighting, DDC Controls, HVAC	74
Charlweston Armory: Install New Lighting	10
Chatham Armory: Boiler Replacment	151
Chatham Armory: Controls/EMS Upgrade	84
Chatham Armory: Electrical Upgrades	38
Chatham Armory: Windows Replacement/Upgrade	112
Clarksburg Armory: Insttaled New Lighting	137
Clay Center Armory (50/50): Lighting And Occupancy Switch Retrofits	25
Clearfield: New Doors	58
Clearfield: Roof Replacement	59
Colby Armory (50/50): Lighting And Occupancy Switch Retrofits	20
Concordia Armory (50/50): Lighting And Occupancy Switch Retrofits	36

Project	Estimated Financial Obligation (\$000s)
CPJTC 1003: HVAC Replacement	60
CPJTC 7 And 8: Insulated Steel Siding And Window Replacement	120
CPJTC Barracks 2146: HVAC Renovation	435
CPJTC: Historical Lighting Upgrade Phase 2 (Niagra-Caledonia To Sommers	114
CSMS# 2: Lighting, DDC Controls, HVAC	128
Dallas Red Bird: Lighting Replacement	75
Danville FMS: Controls/EMS Upgrade	76
Danville FMS: HVAC Upgrade	32
Danville FMS: Lighting Retrofit	7
Danville FMS: Windows Replacement/Upgrade	8
Dodge City Armory (50/50): Lighting And Occupancy Switch Retrofits	26
Dover: Armory Plumbing Renovation And Design	186
Dover: Window/Doors Design Only	15
Dugway Proving Ground: Fy12 QUTM- Install Exterior Insulation (EIFS) Avery & Ditto Areas	659
Dugway Proving Ground: Fy12 QUTM- Install Exterior Insulation (EIFS) Mission Bldgs	722
Dugway Proving Ground: Fy12 QUTM- Install Exterior Insulation English And Carr Areas	741
Dugway Proving Ground: Fy12 QUTM- Insulate Attics Bldg #5132 5140	171
Dugway Proving Ground: Fy12 QUTM- Repair Lighting, HVAC, & Motors	716
Dugway Proving Ground: Fy12 QUTM- Replace Boilers Various Buildings	666
Ellicott City: Water Heater Replacement	9
Everett: Boiler Replacement	95
Everett: Install Central Air Or Mini-Split AC Units	110
Far East Dist Engr: Fy12 QUTM Replace T12 Lighting With T8 Lighting	491
Fargo Afrc: Replace Inefficient Boiler And Chiller With Current Technology	287
Farmington Armory: Replaced Water Heaters With Smaller	1
Festus FMS: Replace Lights	7
Forbes AASF 636 (100fd): Roof Insulation, HVAC Supply System, Window, DDC, Building Envelope, And Lighting Retrofits.	425
Fort A.P. Hill: Implement (5) Different Low Cost Energy Conserving Measures In All Buildings	145
Fort A.P. Hill: Install New HVAC System, Windows, And Insulated Ceiling In (2) Boq's	224
Fort A.P. Hill: Replace Kitchen Exhaust Fans In (2) Dfac's With High Efficient	107

Project	Estimated Financial Obligation (\$000s)
Fort A.P. Hill: Replace Old Heat Pumps With High Efficient Heat Pumps	273
Fort A.P. Hill: Replace Old Window And Install EIFS On (2) Boq's	94
Fort A.P. Hill: Replace Old Windows With New Insulated Windows	324
Fort Belvoir: Decentralization Heating Plant 12 street	4,200
Fort Belvoir: Decentralization Heating Plant 1400 area	3,753
Fort Belvoir: Replace HID Cobra-Head street lights with LED lights	1,397
Fort Buchanan: Lighting in various POV lots	700
Fort Carson: Boiler Replacements	1,217
Fort Carson: EEAP Energy Improvements	1,100
Fort Carson: Expand EMCS to 25 Facilities	1,304
Fort Carson: Lighting Retrofit for 14 Facilities	207
Fort Carson: Lighting Retrofits for 22 Facilities	906
Fort Carson: Replace Chillers in 17 Facilities	1,665
Fort Drum: A/C System Controls	915
Fort Drum: Baseboard Heat	32
Fort Drum: Ceiling Fans	11
Fort Drum: Convert LPG	538
Fort Drum: Insualtion in Bays	69
Fort Drum: Parking Lot LED	34
Fort Drum: Replace Boilers	1,051
Fort Drum: Replace Chiller	831
Fort Drum: Replace Overhead Door	10
Fort Drum: Repurpose facility	1,864
Fort Drum: Security Lighting LED	13
Fort Drum: Small Bldg Controls	102
Fort Gordon: Install HVAC Controls In Bldg-21717.	82
Fort Gordon: Install HVAC Controls In Bldg-21722.	78
Fort Gordon: Install HVAC Controls In Bldg-33800.	144
Fort Greely: Fy12 QUTM Repair Building Envelope With EIFS And Replace Doors & Windows At Bldg 675	202
Fort Greely: Fy12 QUTM Replace Overhead Doors With Energy Efficient Doors At Bldgs 608, 615, 626, 656, 658, And 675	140
Fort Greely: Fy12 QUTM Replace Windows At Bldg 100 & 608	329
Fort Greely: Repair Building Envelope With EIFS And Replace Doors & Windows At Bldg 675	202

Project	Estimated Financial Obligation (\$000s)
Fort Greely: Replace Overhead Doors With Energy Efficient Doors At Bldgs 608, 615, 626, 656, 658, And 675	140
Fort Greely: Replace Windows At Bldg 100 & 608	329
Fort Hood: ECIP ECM Fan Coil Motors Retrofit	1,800
Fort Hood: QUTM ECM Fan Coil Motors Retrofit	465
Fort Jackson: Lighting Upgrade	830
Fort Jackson: Low Cost/No Cost ECMs	1,458
Fort Lesley J McNair: FY 12 QUTM Upgrade 500 Ton Chiller @ Bldg 64	100
Fort Lesley J McNair: FY12 QUTM Retro Commissioning NDU (CX-1-MC+F431)	295
Fort Lesley J McNair: FY12 QUTM, Install Programmable Thermostats, (Bldg 62)	29
Fort Lesley J McNair: FY12 QUTM, Install Weather Stripping/Sealing At 8 Buildings To Improve Facility Envelop Efficiency (Bldgs 52, 48, 35, 47, 41, 40, 42 & 46)	194
Fort Myer: FY12 QUTM, Install Programmable Thermostats, (Bldg 241, 313, 404, 450, 480 And 483)	142
Fort Myer: FY12 QUTM, Install Weather Stripping/Sealing At 8 Facilities To Improve Facility Envelop Efficiency (Bldg 246, 247, 248, 250, 251, 313, 400, 305)	194
Fort Polk: Bldg 2391 Super PM	2,295
Fort Polk: Bldg 1355 Super PM	4,485
Fort Polk: Bldg 1454, Showboat Theater HVAC	1,277
Fort Polk: Bldg 2675 Boiler And Controls Replacement	412
Fort Polk: Bldg 3220 HVAC Upgrade	625
Fort Polk: Bldg 7012 Insulation And HVAC Installation	420
Fort Polk: Bldg 7013 Insulation And HVAC Installation	420
Fort Polk: Install Split HVAC Systems In TEMFs 2750, 2751, 3003, 3020	1,035
Fort Polk: Replace Lights With Energy Efficient LED Lights Blds, 427, 428, 920, 921, 922, 924, 930, 2824, 2826	249
Fort Riley: HVAC & EMCS Efficiency Upgrades	1,300
Fort Riley: Install Lighting Controls In Barracks Hallways	172
Fort Riley: Install Lighting Controls In Barracks Laundry Rms	854
Fort Riley: Multiple Building Lighting Upgrade	466
Fort Riley: Repair Cvwf Controls & Install Vfds	1,285
Fort Riley: Replace Faucet Aerators Main Post	15
Fort Riley: Replace Hi-Bay Lighting, 3 Buildings	203

Project	Estimated Financial Obligation (\$000s)
Fort Riley: Replace Teltron EMCS Systems	280
Fort Rucker: Occupancy Sensors	217
Fort Rucker: Repairs To Lighting, HVAC, And Windows	105
Fort Rucker: Window Replacement	286
Fort Stewart: Install High Efficiency Pumps And Motors	60
Fort Stewart: Install Variable Frequency Drive On Wood Fired Boiler	225
Fort Stewart: Replace Fuel Oil Boiler With More Efficient NG Boilers	160
Fort Stewart: Replace Inefficient HVAC System	350
Fort Wainwright: FY12 QUTM Recommissioning Of Physical Fitness Center Buildings 3709	160
Fort Wainwright: FY12 QUTM Recommissioning Of Simulation Buildings 3000 And 3437	332
Fort Wainwright: FY12 QUTM Replace Exterior Building Lights With LED Lights	1,992
Fort Wainwright: FY12 QUTM Replace Mechanical Motor Couplings With Magnetic Couplings And Capacitors In HVAC Systems	3,047
Ft Benning: Desktop Smart Strips	242
Ft Benning: Incandescent Replacement	155
Ft Benning: LED Parking Lights	1,089
Ft Benning: LED Street Lights	1,254
Ft Benning: Replace Sensors & Switches	252
Ft Benning: Replace T-12	52
Ft Campbell: Bldg Envelop	777
Ft Campbell: CFLs	203
Ft Campbell: Exit Signs	170
Ft Campbell: Occup Sensors	258
Ft Campbell: Prog Tstats	87
Ft Wood 1200 Area: Replace 525 Windows	253
Ft Wood 1270: Replace Boiler And DDC Controls	35
Ft. Detrick: Batteries	2,500
Ft. Detrick: Boilers	750
Ft. Detrick: Dedicated Outside Air	1,000
Ft. Detrick: Post -Wide System	754
Ft. Detrick: Recommissioning	90
Ft. Detrick: Waste To Energy	240

Project	Estimated Financial Obligation (\$000s)
Ft. Leavenworth: Replace HVAC Plant, Admin Gen Purp, Bldg 52, HQ, Cac & Repair HVAC Distribution System, Admin Gen Purp, Bldg 52, HQ Cac	3,200
Grand Prairie: Lighting Replacement	33
Great Bend Armory (50/50): Lighting And Occupancy Switch Retrofits	49
Great Bend Armory (50/50): Replace HVAC Supply Using ASHRAE 189.1. DDC Control System And Building Commissioning. Advanced Meters.	91
Harrisburg: Renovate Bldg #6	900
Hutchinson Armory (50/50): Replace HVAC Supply Using ASHRAE 189.1. Energy Recovery Wheels. DDC Control System And Building Commissioning. Advanced Meters.	139
Ike Skelton Training Site Annex: Replace Package Unit	32
Ike Skelton Training Site CSMS: Replace #2 Rooftop Unit	40
Ike Skelton Training Site CSMS: Replace #3 Rooftop Unit	37
Ike Skelton Training Site CSMS: Replace Boiler	38
Junction City Armory (50/50): Lighting And Occupancy Switch Retrofits	37
K-16 Air Base: Fy12 QUTM Replace Inadequate Insulation With High Efficient Building Insulation	499
Kansas City Armory (50/50): Lighting And Occupancy Switch Retrofits	28
Kennett Armory: Replace Drill Hall Lights	17
Kennett Armory: Replaced Locker Room Lighting	5
Kennett Armory: Replaced Water Heaters With Smaller	8
Keyser Armory: Installed New Lighting	90
Kingshighway Armory: Replaced 25 Ton Condensor	18
Kirksville Armory: Add Louvers To Drill Hall Ceiling To Stop Heated Air From Escaping	3
Lawrence Armory (50/50): Lighting And Occupancy Switch Retrofits	30
Lebanon: Window/Doors Replacement	33
Lehighton: Boiler Replacement	312
Lenexa Armory (50/50): Replace HVAC Supply Using ASHRAE 189.1. Energy Recovery Wheels. DDC Control System And Building Commissioning. Advanced Meters. Destratification Fans.	310
Lexington Ave Armory: Multiple Technologies	1,500
Liberal Armory (50/50): Lighting And Occupancy Switch Retrofits	17
Liberal Armory (50/50): Replace HVAC Supply Using ASHRAE 189.1. DDC Control System And Building Commissioning. Advanced Meters.	91
Lock Haven: Install Central Air Or Mini-Split AC Units	110

Project	Estimated Financial Obligation (\$000s)
Lorain: Armory HVAC Renovation	331
Manhattan Armory (50/50): Gshp HVAC Supply System, Energy Efficiency Lighting, And Building Envelope Retrofit.	301
Martindale: Lighting Replacement And On-Demand Water Heater Installation.	56
Martinsburg Armory: Installed New Lighting	105
Marysville Armory (50/50): Lighting And Occupancy Switch Retrofits	18
Middletown: Window/Doors Design Only	16
Monett Armory: Replaced HVAC	4
Moundsville Armory: Installed New Lighting	99
Nanticoke: Install Central Air Or Mini-Split AC Units	179
Nanticoke: Lighting Replacement	170
Nevada Armory: Replaced Drill Hall Heaters	3
Newton Armory (50/50): Lighting And Occupancy Switch Retrofits	37
Newton Armory (50/50): New High Efficiency Ir Overhead Heaters To Replaced Outdated Forced Air Antiquated Heater Units	21
Norton Armory (50/50): Lighting And Occupancy Switch Retrofits	23
Norwalk: Plumbing Upgrade And Design	119
Orchard Mates: Upgrade Lights, HVAC & Building Shell	150
Orchard Range Ts: Upgrade Lights & HVAC	100
Paola Armory (50/50): Replace HVAC Supply Using ASHRAE 189.1. DDC Control System And Building Commissioning. Advanced Meters.	149
Phoenixville: Install HVAC & Automated Temperature Control	126
Pine Grove: Boiler Replacement/ATC System	196
Piqua/Lebanon: Armory Plumbing Renovation And Design	417
Pratt Armory (50/50): Lighting And Occupancy Switch Retrofits	20
Presidio Of Monterey: Install Efficient Lighting.	137
Presidio Of Monterey: Install Lights With Occupancy Sensors.	104
Presidio Of Monterey: Install Programmable Thermostats	45
Presidio Of Monterey: Integrate 11 Buildings Into Lonworks EMCS System.	98
Presidio Of Monterey: Lighting Improvements, Especially Occupancy Sensors.	253
Queen Anne: Boiler Replacement	50
Rae - 920: Upgrade Building Electrical	35
Restone Arsenal: Install Programable Thermostats	80

Project	Estimated Financial Obligation (\$000s)
Restone Arsenal: Integration Of Buildings With Existing DDC Controls To The Redstone Umcs	500
Restone Arsenal: Replace Incandescent Exit Lights With LED Exit Lights	52
Restone Arsenal: Replace Incandescent Lights With Compact Fluorescents	89
Restone Arsenal: Replace Metal Halide With T5 Or T8	427
Restone Arsenal: Replace T12 Lighting With Super T8	804
Restone Arsenal: Replace T12 Lighting With T8	437
Restone Arsenal: Retrofit Hot Water Services And Insulate Piping	254
Restone Arsenal: Weather Stripping Measures Doors And Windows	777
Richlands FMS: Controls/EMS Upgrade	50
Richlands FMS: Lighting Retrofit	20
Richmond CSMS: Controls/EMS Upgrade	211
Richmond CSMS: Lighting Retrofit	73
Richmond CSMS: Water Conservation/Upgrade	9
Richmond Waller Depot: Controls/EMS Upgrade	192
Richmond Waller Depot: Lighting Retrofit	53
Rocherter CSMS C: Boiler Plan Modification	85
Rock Island Arsenal: Energy Reduction Repairs & Replace Lighting, Bldg 312	49
Rock Island Arsenal: Install Automatic Lighting Controls, Bldg 390	337
Rock Island Arsenal: Install Lighting Controls For Bldgs 102, 103 And 104	320
Rock Island Arsenal: Install Lighting Controls, Bldg 60/3/E & S	55
Rock Island Arsenal: Phase 2, Replace Plating Tanks In Factory, Bldg 212	2,250
Rock Island Arsenal: Replace Steam Traps	50
Rock Island Arsenal: Weatherstripping Repairs, Phase 2	99
Ronkonkoma AASF#1: Energy Efficiency Improvement	150
Sagami General Depot: Fy 12 QUTM Replace Steam Distribution Pipe	150
Salina AASF 2 (100fd): HVAC Supply, Window, DDC, Building Envelope, And Lighting Retrofits.	380
Salina West Armory (50/50): Lighting And Occupancy Switch Retrofits	51
Sandston FMS 1: Controls/EMS Upgrade	7
Sandston FMS 1: Lighting Retrofit	43
Sandston FMS 1: VRFZ Heat Pump	11
Sandston FMS 1: Water Conservation/Upgrade	16
Sandston FMS 1: Weatherization	11
Sandston FMS 2: Controls/EMS Upgrade	7
Sandston FMS 2: Lighting Retrofit	43

Project	Estimated Financial Obligation (\$000s)
Sandston FMS 2: VRFZ Heat Pump	107
Sandston FMS 2: Water Conservation/Upgrade	3
Sandston FMS 2: Weatherization	15
Schofield Bks Mil Reserve: Fy12 QUTM Replace Ext HID Ltg W/LED & Controls For Quads I, J, K	1,500
Sellersville: Replace Windows And Doors	89
Sioux Falls Utes: Lighting, DDC Controls, HVAC	44
Smith Center Armory (50/50): Lighting And Occupancy Switch Retrofits	22
Springfield FMS: Replace HVAC Units	7
State College: Replace ATC Valves	62
Staunton FMS: Controls/EMS Upgrade	79
Staunton FMS: Lighting Retrofit	3
Staunton FMS: Water Conservation/Upgrade	3
Staunton FMS: Weatherization	8
Stephenville: Lighting Replacement	27
Sturgis FMS: Lighting, DDC Controls, HVAC	44
Tarleton: Armory Windows,Door, HVAC, Electric Upgrade And Design	436
Topeka CSMS Bldg. 300/208 (100fd): Daylighting, Heating, Window, And Lighting Retrofits.	325
Topeka State Def Bldg. (16.5fd/83.5st): Lighting And Occupancy Switch Retrofits	68
USAG Natick: Install Occupancy Sensors Throughout The Installation In Areas Where Lighting Is Not Needed All The Time, Such As Conference Rooms, Storage Rooms, And Individual Offices.	109
USAG Natick: Replace Corridor Lighting In Bldgs 3 & 4 With High-Efficiency Fixtures, And Install Occupancy Sensors.	401
USAG Natick: Replace Weather Stripping On 30 Doors Throughout The Installation.	14
Waco: Lighting Replacement	29
Walbridge: HVAC DESIGN	42
Walbridge: HVAC Renovation	711
Washington: Boiler Replacement And Install HVAC	713
Watervliet Arsenal: Replace Lighting Building #25 Third Floor (66,000 Sf).	184
Webster FMS: Lighting, DDC Controls, HVAC	19
Weslaco: Lighting Replacement	44
West Pittston: Replace Doors And Windows	196

Project	Estimated Financial Obligation (\$000s)
White Sands Missile Range: Exterior Lighting Retrofits & Controls	48
White Sands Missile Range: Install Direct Digital Controls (DDC) In Bldgs 1622 And 272	520
White Sands Missile Range: Lighting Retrofits & Controls	122
White Sands Missile Range: Premium Efficiency Motor Retrofits	100
Wichita East Armory (50/50): Lighting And Occupancy Switch Retrofits	51
Wichita South Armory (50/50): Lighting And Occupancy Switch Retrofits	40
Wichita South Armory Annex (50/50): Lighting And Occupancy Switch Retrofits	13
Wichita West Armory (50/50): Lighting And Occupancy Switch Retrofits	49
Woodstock Armory: Controls/EMS Upgrade	127
Woodstock Armory: Lighting Retrofit	29
Woodstock Armory: Water Conservation/Upgrade	18
Woodstock Armory: Weatherization	4
Wylie: Lighting Replacement	59
Yongsan Garrison: Fy12 QUTM Repair Failed Potable Water Distribution Lines	739
Yongsan Garrison: Fy12 QUTM Repair Failed Steam Distribution Lines	494
Youngstown: Window/Doors Design Only	5
Renewable Energy	1,531
Army Aviation Support Facility, Bldg 260, Bangor: Solar Wall Installed On Clerestory Of Hangar. Connected To HVAC Duct Work To Augment Heating.	121
Camp Keyes: Solar Thermal System Integrated Into The Existing Building Automation System	42
Fort Hood: Bldg #4409 -30 Kw Rooftop Photovoltaic Array Demonstration Project	220
Ft. Harrison: Solar DHW For Boq's	186
JBLM 3106 ASSF#1: Solarwall	168
Rock Island Arsenal: Repair Bent Shaft On Hydro Dam Turbine No. 8, Bldg 160	557
Various RC's: Wind Feasibility Study	15
YTC Mates-960: Solarwall	223
NAVY	425,579
Energy Efficiency	373,520
Camp Lemonnier Djbouti: Replace Shower Heads With Low Flow	3
Camp Lemonnier Djbouti: Replace Through Wall AC With Split Units	3,700

Project	Estimated Financial Obligation (\$000s)
CBC Gulfport MS: Energy- DDC Energy Conservation & Control	282
CBC Gulfport MS: Heat Pump Upgrades To Bldg 309	264
CBC Gulfport MS: Retro Commissioning Tier I	193
CBC Gulfport MS: Retro Commissioning Tier II	259
CFA Okinawa: Energy - Install Solar Film On Windows, Var. Bldgs, Okinawa	626
CFA Okinawa: Energy - Lighting Retrofit, 11 Buildings, Okinawa	231
CFA Sasebo Ja: Energy - Exhaust Air & Ventilation Reduction,	307
CFA Sasebo Ja: Energy - Lighting Retrofit, HID To T5, Bldg 239, Sasebo	106
CFA Sasebo Ja: Energy - Lighting Retrofit, HID To T5, Bldg 480, Sasebo	307
CFA Sasebo Ja: Energy - Repair Chiller	1,304
CFA Sasebo Ja: Energy - Temperature Setback, Sasebo	249
CFA Yokosuka Ja: Demo O-Club Pool	224
CFA Yokosuka Ja: Lighting Retrofit Project	826
CFA Yokosuka Ja: Retrofit Exit Signs At Yokosuka	854
CFA Yokosuka Ja: Rpl 200a Steam Line, 3856	634
JEB Little Creek-Fort Story VA: ECIP Fy11 Solar Wall	930
JEB Little Creek-Fort Story VA: Energy Reduction Lighting Project	944
JEB Little Creek-Fort Story VA: Replace Steam Line Quay Wall	1,585
Joint Base Pearl Harbor Hickam Hi: Bldg 10 Nctams & 27 Lualua, AC Split Systems	540
Joint Base Pearl Harbor Hickam Hi: Bldg 1623, Low Flow Water Fixtures	66
Joint Base Pearl Harbor Hickam Hi: Bldg 2030, HID Retrofit	316
Joint Base Pearl Harbor Hickam Hi: Bldg 700, Low Flow Water Fixtures, Camp Smith	100
Joint Base Pearl Harbor Hickam Hi: Bldg 87 Data Center Energy Upgrades	711
Joint Base Pearl Harbor Hickam Hi: Bldgs 16, 81, 259, AC System Upgrades, Makalapa (Window A/C To Split)	1,599
Joint Base Pearl Harbor Hickam Hi: Energy - Replace Chillers At Bldg 440	509
Joint Base Pearl Harbor Hickam Hi: Energy - Replace Plumbing Fixtures In 12 Buildings	289
Joint Base Pearl Harbor Hickam Hi: High Bay Lighting Retrofit, Nctams	487
Joint Base Pearl Harbor Hickam Hi: HVAC Renovation Bldg 2	1,790
Joint Base Pearl Harbor Hickam Hi: Indoor Lighting Retrofit, Makalapa	463
Joint Base Pearl Harbor Hickam Hi: Install Highbay Fluorescent Light Fixtures B1072h, Etc; Packaged With	646
Joint Base Pearl Harbor Hickam Hi: Retrocommissioning	552

Project	Estimated Financial Obligation (\$000s)
Joint Base Pearl Harbor Hickam Hi: Upgrade Lighting From T-12 To T8 (25 Watt)	166
NAF Atsugi Ja: Steam Trap Survey And Replace	600
NAF Atsugi Ja: Temperature Setbacks, Atsugi, Geo Mar Ecm 6	400
NAF El Centro CA: Energy-Facility Energy Improvements Bldg 203	24
NAF Misawa: Energy - Install Card Key & Temp Setback B537, Nafm	44
NAS Corpus Christi TX: Bldg 103 - 20 Ton HVAC Replacement	62
NAS Corpus Christi TX: Bldg 1740 - 35 Ton Air Cooled Chiller System Replacement	112
NAS Corpus Christi TX: Bldg 7 - 95 Ton Air Cooled Chiller Replacement	155
NAS Corpus Christi TX: Bldg 7 Boiler Replacement	35
NAS Corpus Christi TX: Energy Savings Project - NASCC Bldg 1281 Boiler Replacement And Water Conservation	685
NAS Corpus Christi TX: Energy Savings Project - NASCC Bldg 1824 HVAC And Retrocommissioning	287
NAS Corpus Christi TX: Energy Savings Project - NASCC Taxiway Lighting LED Replacement	428
NAS Corpus Christi TX: Energy Savings Project Various Lighting Projects - NASCC	1,132
NAS Corpus Christi TX: Hangar 57 Steam To Electric Heat Conversion	36
NAS Corpus Christi TX: Installation Of City Effluent Watering System - NASCC Golf Course	2,500
NAS Corpus Christi TX: Repair 8" Dia. Nat. Gas Line - South Gate	48
NAS Corpus Christi TX: Replace 400' Of 12" Dia. Water Line - D1a	498
NAS Corpus Christi TX: Replacement Of Hangar 51 HVAC System W/ 100 Ton Air Cooled Chiller Centralized System (Part Of Hangar 51 Renovation)	200
NAS Corpus Christi TX: Replacement Of Hangar 58 HVAC System W/ 80 Ton Air Cooled Chiller Centralized System And 2 X 8 Ton Dx Units (Part Of Hangar 58 Renovation)	215
NAS Fallon Nv: Airflow Improvements At Bldg #98	136
NAS Fallon Nv: Energy - Bq Wall Pack And Path Light Retrofit	37
NAS Fallon Nv: Energy Saving Initiatives - Centroid	54
NAS Fallon Nv: LED Light Fixtures, A Timer For The Motor Generator, And Line Voltage Thermostats For Evaporative Coolers At Bldg #307.	107
NAS Fallon Nv: Relamp H1 And H7, Occupancy Sensors In H5	43
NAS Jacksonville FL: Base Gym & Fitness Center Lighting, Envelope And Water	347

Project	Estimated Financial Obligation (\$000s)
NAS Jacksonville FL: Bldg 200 Restroom Repairs	708
NAS Jacksonville FL: Bldg 614 Cool Roof Installation	925
NAS Jacksonville FL: Bldg 852 Renovation	522
NAS Jacksonville FL: Compressed Air Plant Condensate Reuse System	6
NAS Jacksonville FL: DDC, Dcv And EMCS Upgrades For Multiple Buildings	1,119
NAS Jacksonville FL: Olf White House Generator And Transformer Replacement	239
NAS Jacksonville FL: Olf White House Tower Envelop Repair	145
NAS Jacksonville FL: Replace Chiller At Bldg 987	155
NAS Jacksonville FL: Wastewater Sludge Chemical Oxidation Treatment System	767
NAS Jacksonville FL: Water Softener Installation On Compressed Air Plant Cooling Tower	3
NAS JRB Fort Worth TX: Replace 102 Flush Mount Taxiway Lights With LED	118
NAS JRB Fort Worth TX: Retrocommission 10 Bldgs	336
NAS JRB Fort Worth TX: Water Efficiency Improvements Basewide	309
NAS JRB New Orleans La: Replace LED Street Lights & Remove 30 Lights	200
NAS JRB New Orleans La: Replace LED Street/Interior Lights	592
NAS JRB New Orleans La: Replacement Of DDC Control Systems	522
NAS JRB New Orleans La: Retro Commissioning Of 23 Building	502
NAS Key West FL: Ceramic Coating Boca Chica	165
NAS Kingsville TX: Energy Conservation Four Projects	151
NAS Kingsville TX: Engery Conservation Bldg Commissioning/HVAC Repairs And Controls In 4 Bldgs	326
NAS Meridian MS: B208 Replace Outside Air Unit With Heat Pump	179
NAS Oceana VA: Consolidated Vsd/Vfd And Weatherization App	713
NAS Oceana VA: Dam Neck Bldg 127 Energy Project	206
NAS Oceana VA: Lighting Systems Upgrades	372
NAS Oceana VA: Repair Portion Of Roof And Gutters Bldg 122	784
NAS Oceana VA: Roof Repair Bldg 200	1,935
NAS Oceana VA: Roof Repair Bldg 290/292	924
NAS Oceana VA: Roof Repair Bldg 531	969
NAS Oceana VA: Roof Replacement Bldg 340	1,814
NAS Oceana VA: Turbocor Air Cooled-Bldg 423 (Techval)	400
NAS Pensacola FL: Add Additional DDC Points To Var Bldgs (5)	40
NAS Pensacola FL: Automate Water Pumps At The Water Treatment Plant	42

Project	Estimated Financial Obligation (\$000s)
NAS Pensacola FL: Boiler Inspections And Certifications	119
NAS Pensacola FL: Energy-Lighting Replacements Multiple Buildings	466
NAS Pensacola FL: Energy-Replace Heaters, Various Facilities	262
NAS Pensacola FL: Lighting Timer Controls Bldg #3465	49
NAS Pensacola FL: Maintenance Upgrade And Replace Lighting Fixtures	102
NAS Pensacola FL: Replace 100 Ton Chiller	143
NAS Pensacola FL: Replace Bldg 803 HVAC With Gshp	236
NAS Pensacola FL: Replace Boilers	183
NAS Pensacola FL: Replace Chiller	128
NAS Pensacola FL: Replace HVAC In Bldg 625c	194
NAS Pensacola FL: Rol Uv Light Fixtures	106
NAS Whidbey Island Wa: Energy - Facility Upgrades Phase 2	997
NAS Whiting Field Milton FL: Energy-Ventilation Control Upgrades, Bldg #3148	68
NAVBASE Coronado San Diego CA: Electric Charging Station Carport At Nab	450
NAVBASE Coronado San Diego CA: Recovery-Project #Rm09-1439, Advance Meter Installations	1,098
NAVBASE Guam: Replace Light Fixtures & Install Temp Setback	1,361
NAVBASE Guam: Retro Commissioning Of 6 Buildings	769
NAVBASE Guam: Retrocommissioning Of 18 Bldgs	3,297
NAVBASE Kitsap Bremerton Wa: Energy - Bldg #6593 HVAC Repairs And Energy Improvements	425
NAVBASE Kitsap Bremerton Wa: Energy - Trident Training Facility Chiller Plant Replacement	1,529
NAVBASE Kitsap Bremerton Wa: Replace Chiller 1 & 4 At Bldg 6589	553
NAVBASE Kitsap Bremerton Wa: Swfpac Bldg 6401 DDC	770
NAVBASE Kitsap Bremerton Wa: Swfpac Mla Lighting	632
NAVBASE Point Loma CA: Bldg #52 Interior LED Lighting Upgrade	147
NAVBASE Point Loma CA: Bldg #603 . Replace Boiler.	64
NAVBASE Point Loma CA: Demand Limiting/Load Rolling (DlIr)	193
NAVBASE Point Loma CA: Energy - LED Street Light Conversion	840
NAVBASE Point Loma CA: Fast Payback Lighting Joc	229
NAVBASE Point Loma CA: Install Solar Thermal Pool Heater, Nmawc.	134
NAVBASE Point Loma CA: Ot-3 Interior LED Lighting Upgrade	280
NAVBASE Point Loma CA: Replace Remaining Street Lights With LED	184
NAVBASE Point Loma CA: Upgrade Galley Lighting Nmawc Bldg #55	32

Project	Estimated Financial Obligation (\$000s)
NAVBASE San Diego CA: Fast Payback B3223 Replace Rtu Controls And Motors	76
NAVBASE Ventura Cty Pt Mugu CA: Energy - Central Irrigation Repairs	325
NAVBASE Ventura Cty Pt Mugu CA: Estcp Solar Thermal & Solar Photovoltaic Proiect At Port Hueneme Buildings 61, 1519, And 1481	520
NAVBASE Ventura Cty Pt Mugu CA: Fy12 Rme - Replace Lighting At Ph-61, Ph-1444, Ph-471, Ph-1191, Ph-1497, PM-311, And PM-20	912
NAVBASE Ventura Cty Pt Mugu CA: Replace Lighting & DDC And Repair HVAC Bldg #Ph1000, Port Hueneme	782
NAVSTA Great Lakes Il: Decentralize Steam System	57,303
NAVSTA Guantanamo Bay Cu: Installation Of Two 3.5 Mw Generators	3,217
NAVSTA Guantanamo Bay Cu: Replace Attic Insulation In ~220 Housing Units	767
NAVSTA Guantanamo Bay Cu: Separate Bathroom Lights From Exhaust Fans 221 Units	267
NAVSTA Guantanamo Bay Cu: Tierra Kay Housing Improvements- HVAC, Exterior Envelope And Attic Insulation (52)	5,153
NAVSTA Guantanamo Bay Cu: West Iguana HVAC Replacement	288
NAVSTA Mayport FL: Bldg #1264 HVAC Upgrade	160
NAVSTA Mayport FL: Bldg #243 HVAC Upgrade	760
NAVSTA Mayport FL: Bldg #244 HVAC Upgrade	285
NAVSTA Mayport FL: Energy Upgrade DDC Multiple Buildings	3,283
NAVSTA Mayport FL: Energy--Boiler Upgrades For Multiple Buildings	474
NAVSTA Mayport FL: Energy-Fast Payback Upgrades Multiply Bldgs	424
NAVSTA Mayport FL: Heat Pump Upgrades, Multiple Bldgs	1,561
NAVSTA Mayport FL: Sermc Heating Coil Replacement	259
NAVSTA Newport RI: Repl Steam Lines 2-33 To Easton Street	1,681
NAVSTA Newport RI: Repl Steam Lines Nuwc Phase 2	1,098
NAVSTA Newport RI: Replace Steam Lines	1,196
NAVSTA Newport RI: Replace Steam Traps Various Locations Newport	1,369
NAVSTA Newport RI: Solar Thermal Collection Bldgs 292	1,330
NAVSTA Norfolk VA: Energy - Nsn Energy Improvements Part 1	2,512
NAVSTA Norfolk VA: Naval Station Norfolk Lighting Project	1,769
NAVSTA Norfolk VA: Repair E Substation	618
NAVSTA Norfolk VA: Water Conservation Upgrades	500
NAVSUPPFAC Diego Garcia: Energy - Exit Sign Retrofit, Various Bldgs, D. Garcia	92

Project	Estimated Financial Obligation (\$000s)
NAVSUPPFAC Diego Garcia: Install Air Source Heat Pumps For Water Heating	113
NAVSUPPFAC Diego Garcia: Retro Cx Of Various Nsfed Buildings	2,501
Navsuppu Saratoga Springs Ny: Energy Retrofit Street Lights (Design)	424
NAWS China Lake CA: Estcp - Install Roof Mounted 50 Kw Conc. Pv Tracking System Far # Pwcl0250 31440	431
NAWS China Lake CA: Installed CFL Exterior Street/Parking Lighting - Ph li Various Bldgs	250
NAWS China Lake CA: Replace Lighting In Construction Shop And Range Control Bldg, Superior Valley 02020, 70134	103
NAWS China Lake CA: Techval - Install EIFS Insulation System 01092	67
NSA Andersen: Install Energy Management Control System	2,927
NSA Andersen: Replace Conventional Water Heaters And Lighting	1,399
NSA Andersen: Retrocommissioning Of Facilities	7,363
NSA Annapolis Md: Building Optimization And Recommissioning	526
NSA Bahrain: Perimeter Light LED Retrofit	372
NSA Bahrain: Streetlight LED Retrofit	248
NSA Bahrain: Water Conservation Measures	750
NSA Bahrain: Water Treatment Plant Reject H2o Diversion For Irrigation	222
NSA Bethesda: Building Optimization & Retro-Commisioning	2,421
NSA Bethesda: Energy- Chiller Plant Optimization	1,562
NSA Bethesda: Energy Repair, Builiding Enveloped & HVAC, B148	131
NSA Bethesda: Energy Repair, HVAC B56	526
NSA Bethesda: Energy Repair, Lighting And HVAC , B31 & B58	169
NSA Bethesda: Energy Repair, Lighting, Plumping And Envelope, B20, B24, B25, B26, B27 & B32	924
NSA Bethesda: Energy Repairs, Lighting & HVAC, B11, B13, B14 & B15	634
NSA Bethesda: Energy Repairs, Lighting & HVAC, B52	220
NSA Bethesda: Energy Repairs, Lighting , Water & HVAC , B50, 60 & 61	830
NSA Bethesda: Install Cogeneration Turbine With Heat Recovery	29,350
NSA Bethesda: Install Natural Gas Fuel Cell For 2 Chiller	1,287
NSA Bethesda: Insulate Steam And Chilled Water Lines	222
NSA Bethesda: Lighting Control Sensor , B11	56
NSA Bethesda: Repair Steam & Condensate Line For B11, B1 3 & B20	2,620
NSA Bethesda: Repair Steam & Condensate Line For B3, B60 & B61	717
NSA Bethesda: Repair Windows & Doors, B11 & B14	1,400

Project	Estimated Financial Obligation (\$000s)
NSA Bethesda: Replace 3 Condenser Water Pumps	948
NSA Bethesda: Replace Chiller 9	527
NSA Bethesda: Steam Trap Repair	410
NSA Crane In: Lighting And Controls 16 Buildings (Tenant)	1,100
NSA Crane In: Recommissioning B-6, B-10	49
NSA Crane In: Replace Multiple Boilers	664
NSA Crane In: Replace Secondary Transformers	2,617
NSA Crane In: Water Plant Project	469
NSA Mechanicsburg Pa: Buidling 305 Roof Replacement	2,513
NSA Mechanicsburg Pa: Buidling 308 Roof Replacement	1,281
NSA Mechanicsburg Pa: Replace Windows And Repairs Exterior Walls, Bldg #633	3,351
NSA Mechanicsburg Pa: Roof Replacement And Siding Repair, Bldg 411 And 313	4,351
NSA Mid South Millington Tn: Energy Improvements & Enhancements - Various Buildings (457, 768, 769, 784, 785, & 791)	1,555
NSA Mid South Millington Tn: Energy Imprvmnts & Enhancements To Blds 455 & 456	441
NSA Monterey CA: Energy Spanagel Vfd And Controls	285
NSA Monterey CA: Retrocommissioning For Various NSAm Buildings	309
NSA Monterey CA: Steam Condensate Heat Recovery Bullard Hall (B233)	126
NSA Norfolk VA: Replace Steam Line Quay Wall	1,585
NSA Norfolk VA: Sc1 Replace Roof With Cool Roof	813
NSA Norfolk VA: Water Conservation Project	1,099
NSA Orlando FL: Replace Centrifugal Chiller #1	349
NSA Orlando FL: Replace Centrifugal Chiller #2	349
NSA Panama City FL: Air-Source Heat Pumps (Vrv/Vrf)	619
NSA Panama City FL: Chiller Modernizations For Energy Savings	1,096
NSA Panama City FL: DDC Energy Conservation & Control And Solar Water Heating	1,760
NSA Panama City FL: Energy -Retro Commissioning Of 16 Buildings	684
NSA Panama City FL: Energy -Retro Commissioning Of 2 Buildings	283
NSA Panama City FL: HVAC Upgrades (7 Buildings)	447
NSA Panama City FL: HVAC Upgrades Bldg #484	950
NSA Panama City FL: LED Street/Walkway Lighting	345
NSA Souda Bay Gr: Building Envelope Upgrades	1,620

Project	Estimated Financial Obligation (\$000s)
NSA Souda Bay Gr: Energy - Lighting Controls	184
NSA Souda Bay Gr: Energy HVAC Upgrades	2,628
NSA Souda Bay Gr: Energy Water Conservation	739
NSA Souda Bay Gr: Replace Potable Water Gate Valves	143
NSA Souda Bay Gr: Replace Various Potable Water Valves	118
NSA Souda Bay Gr: Souda Bay Boiler Upgrade Basewide	359
NSA South Potomac Dahlgren VA: Building Optimization And Recommissioning	3,890
NSA Washington Dc: Ecm 1 & 2 - Install Insulation In Attic Wny Building 21 And In Mechanical Piping Bldgs Wny 21, 157, 184, 196 And 210	107
NSA Washington Dc: Ecm 4 - Install Weather Stripping On Windows And Doors	101
NSA Washington Dc: Ecm 5 - Install Vfds To Modulate Fan And Pump Operation	484
NSA Washington Dc: Ecm 8 - Water Conservation Measures	258
NSS Norfolk Naval Shipyard VA: M-130 Steam Line Reroute	639
NSS Norfolk Naval Shipyard VA: NSY Crosswalk Lighting Systems	655
NSS Norfolk Naval Shipyard VA: NSY Norfolk Va Lighting Project	284
NSS Norfolk Naval Shipyard VA: NSY Norfolk Va Lighting Upgrades	721
NSS Norfolk Naval Shipyard VA: Replace Stevens St/B163 Air Line-Phase 2	272
NSS Norfolk Naval Shipyard VA: Replace Stevens St/B163 Air Line-Phase 3	318
NSY Bos Portsmouth Nh: Energy & Repair To Conxolidated Waterfront Tool Crib B55	1,600
NSY Bos Portsmouth Nh: Energy & Bldg Reno Of B174	38,428
NSY Bos Portsmouth Nh: Energy & Struc Repair-Consolidate Subcomponent Ops, B178	38,228
NSY Bos Portsmouth Nh: Energy Conservation & Repairs To Sub Enclosures (RSCs)	19,500
Pacific Missile Range Facility: HVAC Upgrade	374
Pacific Missile Range Facility: Install Energy Management System At PMrf	700
Subase Kings Bay Ga: Replace Central Thermal Plant Chillers	5,527
Subase Kings Bay Ga: Thermal Piping Insulation	1,137
Subase Kings Bay Ga: Underground Thermal Piping Upgrades	2,368
Subase New London Ct: Overhaul Submarine School Chillers	610
WPNSTA Earle Colts Neck Nj: Dispatch Center	1,200
WPNSTA Earle Colts Neck Nj: Main Gate	6,200
WPNSTA Seal Beach CA: Facility Energy Improvements (Options 1 & 3)	187

Project	Estimated Financial Obligation (\$000s)
WPNSTA Yorktown VA: York 461 HVAC Roof	350
Renewable Energy	52,060
CBC Gulfport MS: Building Integrated Photovoltaic	2,106
CFA Okinawa: Energy - Install 110 Kw Pv System On Bldg 7149, Okinawa	1,204
CFA Okinawa: Energy - Install 110 Kw Pv System On Bldg 7150, Okinawa	1,204
CFA Okinawa: Energy - Install 200 Kw Solar Pv Sys, Bldg 1700, Okinawa	2,190
CFA Okinawa: Energy - Install 500 Kw Pv Sys On Bldg 1200, Okniawa	5,475
CFA Okinawa: Energy- Install 120 Kw Pv System On Bldg 7216j, Okinawa	1,314
Joint Base Pearl Harbor Hickam Hi: Dla Bldg 479 Milcon Pv	250
Joint Base Pearl Harbor Hickam Hi: Solar Hot Water	2,811
NAF El Centro CA: Solar Thermal Heating At Small Pool (B. 239)	134
NAF El Centro CA: Solar Thermal& Instantaneous DHW 500 Series Bldgs	99
NAS Meridian MS: B218 Solar Water Heating For Laundry	38
NAVBASE Coronado San Diego CA: Electric Charging Station Carport At Nab	450
NAVBASE Guam: Install Solar Water Heaters And Low Flow Fixtures	681
NAVBASE Kitsap Bremerton Wa: Bremerton Bq Ground-Source Heat Pumps	3,577
NAVBASE Point Loma CA: Install Solar Thermal Pool Heater, Nmawc	134
NAVBASE SAN DIEGO CA: 54kw Photovoltaic And Lighting Upgrades	1,010
NAVBASE San Diego CA: Replace Solar Panels At Adm. Prout Pool	164
NAVBASE Ventura Cty Pt Mugu CA: Arra Ph. 2, Two-100 Kw Wtg's & Synchronous Condenser @ Sni	6,567
NAVBASE Ventura Cty Pt Mugu CA: ECIP P0884, Two-100 Kw Wind Turbine Generator @ Sni	7,110
NAVBASE Ventura Cty Pt Mugu CA: ECIP Ph. 3, 2-100 Kw Wtgs @ Sni; Wtg#6 W/ Road Repair, Hybrid Controls + Concrete Duct Banks	5,058
NAVBASE Ventura Cty Pt Mugu CA: Estcp Solar Thermal & Solar Photovoltaic Procject At Port Hueneme Buildings 61, 1519, And 1481 (Photovoltaic Portion)	520
NAVSTA Newport RI: ECIP - Solar Thermal DHW At Bldg #292 (Fy11 Award)	1,406
NAVSTA Newport RI: Otc Quarters Fy 10 Award	250
NAVSTA Rota: Install Solar Hot Water At Beqs 567, 568, 569, 570	627
NSA Bethesda: Energy Repairs, Gshp B11	4,693
NSA Bethesda: Energy Repairs, Gshp B56	526
NSA Mechanicsburg Pa: Bldg 311 Solar Project	226
NSA Mechanicsburg Pa: Bldg 311 Wind Turbine	269

Project	Estimated Financial Obligation (\$000s)
NSA Panama City FL: Photovoltaic (Pv) Carport Execution	410
NSA Souda Bay Gr: Solar Water Heating	205
NSY Bos Portsmouth Nh: Bldg 306 Solar Thermal	455
Subase Kings Bay Ga: Solar Photovoltaic Carport	897
AIR FORCE	238,462
Energy Efficiency	219,396
Altus: Replace 2 Cooling Towers And 3-Way Valve	146
Altus: Replace Air Cooled Chiller	124
Altus: Replace Boiler And Chiller	265
Altus: Replace HVAC Sys To Include: Boiler, Chiller, Ahu, Controls, Valves, Ducts, Pipes, Pumps	210
Andrews Air Force Base: Energy Upgrade To Installation Support Facilities-1	240
Andrews Air Force Base: Energy Upgrade To Operation Facilities-1	274
Andrews Air Force Base: Energy Upgrades To Flightline-1	388
Andrews Air Force Base: Energy: Repair Lights And Destratification	114
ANG Readiness Center: Energy: Retro Commissioning	2,100
Antigua AS: Repair Chillers Consolidated Instrumentation Facilities	286
Ascension Auxiliary Airfield: Energy Cons: Repair Lighting, Various	651
Ascension Auxiliary Airfield: Energy Cons: Repair Thermostats, Various	286
Aviano: Replace Existing Lights With Energy Efficient Lights And Install Occupancy Sensors To Reduce Energy Consumption	147
Aviano Air Base: Energy Cons: Repair Boilers Multi, Area F	568
Bangor: Energy: Upgrade Ext Lights	460
Barksdale Air Force Base Boiler Replacement	316
Barksdale Air Force Base: Building Envelope Improvement	250
Barksdale Air Force Base: T12 To T9 Conversion	800
Beale Air Force Base: Beale Repair Electric Meters, Multi Facilities - Eeic 52400	147
Beale Air Force Base: Beale Repair Gas Meters, Various Facs - Eeic 52400	56
Beale Air Force Base: Retro-Commission Facilities Beale, Ellsworth, Mountain Home	2,108
Beale Air Force Base: Construct Evaprocool Prefilter System B23260	221
Boise: Energy: Multiple Energy Cons Mes	1,200
Boise: Energy: Retrofit Lighting	260
Buckley Air Force Base: Repair - Energy Efficient Upgrades To B606	348

Project	Estimated Financial Obligation (\$000s)
Cannon Air Force Base: Energy -HVAC Modifications	685
Charleston Air Force Base: (Energy) Lavatory Water Reduction Project, Various Facilities	189
Charleston Air Force Base: Modernize Water Heaters B661	342
Charleston Air Force Base: Repair By Retro-Commission Various HVAC Systems	758
Charleston Air Force Base: Retro Commission HVAC Systems	905
Charleston Air Force Base: Upgrade EMCS	294
Cheyenne: Energy: Upgrade HVAC	608
Columbus Air Force Base: HVAC System Upgrade B268	1,512
Columbus Air Force Base: Repair Columbus Dorms Control Systems	207
Columbus Air Force Base: Repair/Replace Chiller B965	192
Creech Air Force Base: Repair Heat Destratification Fans, Multi Fac	138
Davis-Monthan Air Force Base: Repair (Replace) Radiant Heat, Multi Facs	296
Davis-Monthan Air Force Base: Repair Retro-Commission Multi Facs	197
Dobbins: Renovation	3,374
Dover Air Force Base: HVAC Retrocommissioning Services Multi O&M Facs	223
Dover Air Force Base: Upg Lighting O&M Facs	269
Dyess Air Force Base: Retro Commissioning 4216, 6117	189
Eareckson Air Station: Reconfigure/Repair Waste Heat Loops	2,836
Eareckson Air Station: Upgrade Lighting, Hangars 6, 7, & 8	613
Edwards Air Force Base: Repair EMCS/Scada & Install Gfe Capacitors Afrl	190
Edwards Air Force Base: Repair Water Tank And Piping To B4980	124
Eglin Air Force Base: Energy: Construct Entry Vestibules For Bldg #350, 349	236
Eglin Air Force Base: Energy: Install Programmable Thermostats	190
Eglin Air Force Base: Energy: Replace Windows Hangar 71	106
Eglin Air Force Base: Repair Roofjet Engine Maint Bldg 134: Install Solar Reflective Roof On Bldg #134.	981
Eglin Air Force Base: Replace Chiller At Bldg 100	334
Eglin Air Force Base: Replace Heat Pumps At Bldg 260	168
Eglin Air Force Base: Replace Windows Various Facilities	261
Eglin Air Force Base: Solar Reflective Roof Bldg 260 &127	387
Eglin Air Force Base: Solar Water Heating System At Dining Facility 862: Install Solar Thermal Potable Water Heating System	117
Eglin Air Force Base: Energy: Upgrade Lighting At Various Buildings (13)	115
Eglin Air Force Base: Energy: Upgrade Lighting At Various Facilities (24)	165

Project	Estimated Financial Obligation (\$000s)
Eielson Air Force Base: Repair HVAC Energy Management Control System	1,602
Ellsworth Air Force Base: Repair Building Envelope - Msa	750
Ellsworth Air Force Base: Repair Building Envelope Multi	2,500
Ellsworth Air Force Base: Repair Domestic Hot Water - Solar	1,200
Ellsworth Air Force Base: Repair Energy Systems To Renew	2,800
Ellsworth Air Force Base: Repair Hanger Tail Door Seals	400
Ellsworth Air Force Base: Repair Infrared Heating Systems P2	800
Ellsworth Air Force Base: Repair Mechanical Insulation	375
Ellsworth Air Force Base: Replace Hangar Door Seals - South Docks	450
Ellsworth Air Force Base: Replace HVAC Systems - Qol	655
Elmendorf Air Force Base: Energy Cons Replacement Lighting Fy12	209
Elmendorf Air Force Base: Energy Cons: Repair HVAC Eisa (14 Bldgs))	2,574
Elmendorf Air Force Base: Energy Cons: Repair HVAC Systems (52 Bldgs)	2,813
Francis E Warren Air Force Base: Repair Ceiling Insulation Wsa Bldg 1151	450
Francis E Warren Air Force Base: Repair/Replace Interior Lighting Bldg 1151	100
Fairchild Air Force Base: Add, Water Distr Line, Non-Pot, Smart Irrigation Basewide	188
Fairchild Air Force Base: Repair, Water Leak Repair, Deep Cr	700
Fairchild Air Force Base: Repair, Sanitary Sewage Mains, Deep Creek	910
Fort Richardson: Construct EMCS Connections Jber 24 Facilities	128
Fort Richardson: Energy Building Envelope Ph 1 Richardson	2,147
Francis E Warren Air Force Base: Leak Detection/Repair Natural Gas Distribution System	267
Francis E Warren Air Force Base: Repair Damaged Insulation Base Bldgs (6 Facilities)	481
Francis E Warren Air Force Base: Repair/Upgrade HVAC Chadwell Dining Hall Bldg 325	963
Gen Mitc: Energy: Multi-Fac Imprvements	1,550
Glynco: Energy: Repair HVAC/Lights, B 1	1,700
Grand Forks Air Force Base: Repair (R&M) Energy Lighting Retrofit Basewide	470
Grand Forks Air Force Base: Repair (R&M) LED Exit Signs Retrofit Basewide	168
Grand Forks Air Force Base: Repair Taxiway Lights To LED	168
Grand Forks Air Force Base: Replace High Bay Lighting 3-Bay Hangar B649 (R/M)	177
Grissom: Insulate Buildings	970

Project	Estimated Financial Obligation (\$000s)
Grissom: Ir Heat	343
Grissom: Renovation	6,691
Grissom: Rx, DDC And HVAC Repairs	334
Grissom: Upgrade Lights	295
GRT Fall: Energy: Repair HVAC System Multi Facility	290
GRT Fall: Energy: Upgrade Lighting Base	170
Hanscom Air Force Base: Install Dual Energy Source Water Heaters (Solar)	774
Hanscom Air Force Base: Steam Condensate Rplcmnt Mit Lincoln Lab	2,212
Hill Air Force Base: Install AMR Elc Meters	316
Hill Air Force Base: Repair (Xeriscape) Recreation Park (Was B-308 Parking) Energy	1,112
Holloman Air Force Base: Retro-Commission Multi-Facilities, Holloman Air Force Base	526
Holloman Air Force Base: Repair DDC Controls, Multiple Facilities	3,278
Homestead: Renovation	5,965
Homestead: Repair/Replace DDC	945
HQ Air Force Space Command: LED Street And Parking Lot Lighting - Command Wide	6,400
Hurlburt Field: Energy-Replace Chilled Water Plant, Bldg 91029	1,791
Hurlburt Field: Energy-Retro-Commission HVAC Multi	231
Hurlburt Field: Energy-Repair/Retrocommission Mech Sys, Basewide	1,046
Hurlburt Field: Energy-Upgrade Inefficient HVAC Systems	711
Incirlik Air Base Adana: Retrofit High-Bay Metal Halide Lights W/Induction Lights	200
Incirlik Air Base Adana: Repair HVAC System, Bldg #558	383
Incirlik: Replace Old Deteriorated HVAC System With High Efficient, New Generation HVAC System	932
Jackson: Energy: Multi Fac Energy Improve	1,400
Kadena Af: Install Advanced Electric Meters	95
Kadena Af: Install Advanced Water Meters	133
Key Fld: Energy: Rep HVAC, B705	165
Keesler AFB: Repair Chiller Plant Building 4231	1,163
Keesler AFB: Repair 4121 Chilled Water Loop	2,131
Kirtland Air Force Base, Nm: Install Gshp Equipment	192
Kirtland Air Force Base, Nm: Replaces Lights To Lower Wattage	252
Kirtland Air Force Base: Repair Master Landscape Irrigation System,	130

Project	Estimated Financial Obligation (\$000s)
Basewide	
Klamath: Energy: Multi Enrg Consv Meas	2,000
Kunsan Ab: Energy Management Control System Design	293
Kunsan Air Base: EISA 432 Energy Efficiency Measures - Dorm Cps Bypass	405
Lajes Field: Energy Conservation Improvements, T-572	200
Langley Air Force Base: Repair EMCS Post Wide Phase 2	2,433
Langley Air Force Base: Repair Heating And Cooling Equipment, F. 10, 328	325
Langley Air Force Base: Repair HVAC Improve Energy Efficiency In PMEL, F. 782	135
Langley Air Force Base: Repair HVAC Modifications In Multiple Facilities	641
Langley Air Force Base: Repair Lighting Multi Facilities	350
Laughlin Air Force Base: EMCS Replacement - Multi Facilities	408
Laughlin Air Force Base: Ener-Repair Heating Systems Various Facilities	422
Lincoln: Energy: Upgrade DDC System	470
Little Rock Air Force Base: Sustain Repair Facility HVAC Systems	938
Los Angeles Air Force Base: Repair Lighting And Retrofit, B270-272	312
Los Angeles Air Force Base: Repair Air Cooled HVAC Units	4,000
Luke Air Force Base: Dormitories And Billeting; Installed Low Flow Shower Fixtures	6
Luke Air Force Base: Dormitory Bldg. 133; HVAC Upgrade	455
Luke Air Force Base: Energy Cons: Ea 2 - Energy Control Optimization	754
Luke Air Force Base: Energy Cons: Repair Potable/Waste Water Lines	1,225
Luke Air Force Base: Full Bldg Upgrade To Include Solar Hot Water	276
Luke Air Force Base: New Solar Light Fixtures/Poles On Running Path	156
Macdill Air Force Base: Chilled Water Plant Optimization	1,200
Macdill Air Force Base: EMCS Repair & Enhanced Functionality, Phase 1	1,495
Macdill Air Force Base: Retrocommissioning HVAC, Multiple Facilities	1,033
Malmstrom Air Force Base: Install Destratification Fans Hangers	128
Maxwell Air Force Base: Demo Vaq Bldg 698	310
Maxwell Air Force Base: Repl HVAC Boiler, Acsc Bldg 1402	195
Mcconnell Air Force Base: DDC Upgrade Basewide	900
Mcconnell Air Force Base: Repair & Re-Commission HVAC, Multiple Facilities	529
Mcconnell Air Force Base: Repair Boiler Hangar 1176	700
Mcconnell Air Force Base: Repair Domestic Water Line Leaks	450
Mcentire: Energy: Repair Chiller, B 984	320

Project	Estimated Financial Obligation (\$000s)
Minn St: Energy: Repair Direct Digit Ctls	530
Minot Air Force Base: Repair Base Roofs - Bldg 145 Old Shoppette	435
Minot Air Force Base: Repair Building Envelope Multiple Facilities	137
Minot Air Force Base: Serv: Retro Commissioning, Multi Facilities	247
Minot Air Force Base: Upgrade Lighting Multiple Facilities	208
Misawa Air Base: Bldg #911 Facility Energy Improvements	217
Misawa Air Base: Building Envelope Improvements	967
Misawa Air Base: Has Energy Improvements, Ph 4	2,450
Moody Air Force Base: Repair HVAC Sys, Ops Gp/Cp, B706	454
Moody Air Force Base: Repair/Rpl Boilers/Hot Water Sys, Multi Facs	1,640
Moody Air Force Base: Repair/Rpl Environmental Controls, Mult Facs	114
Moody Air Force Base: Repair/Rpl Lighting Sys, Multi Facs	800
Mountain Home Air Force Base: Repair Building Envelope, Multiple Facilities	225
Mountain Home Air Force Base: Install IR Heaters Controls Multi-Facilities	633
Multi: Retro-Commission Facilities Nellis, Creech, Offutt	2,620
Multi: Seymour Johnson Repair Remote Reading Elec & Gas Meters - Seymour - Eeic 52400	799
Nellis Air Force Base: Repair Lighting Systems With Occpancy Sensors	177
Nellis Air Force Base: Replace Inefficient Boilers, Multi Facilities	1,530
Nellis Air Force Base: Retro-Commissioning	276
Nellis Air Force Base: Repair Demand Ventilation Controls, Multi Fac	156
New Boston Air Force Station: Install EMCS, Phase 1	462
New Boston Air Force Station: Install EMCS, Phase 2	450
Niagara: Door Interlocks, Big Fans, Ir Heat	752
Niagara: Motion Sensors & Shut Off Devices	733
Offutt Air Force Base: Baey 67-9536, Repair Waer Meters - Eeic 52400	98
Offutt Air Force Base: Repair Chilled Water System, B500	1,000
Offutt Air Force Base: Repair Steam Traps, B500, B501, B515	400
Osan Ab: Utility Meter Infrastructure & Consolidation	700
Osan Air Base: Lighting Improvement, Multi Fac	314
Osan Air Base: Replace HVAC Motors, Multi Fac	265
Osan Air Base: Replace Showerheads & Sink Aerators For Fy09 Audit Fac	96
Peterson Air Force Base: Repair HVAC, B2025	3,789
Pittsburgh: Renovation	1,680
Pittsburgh: Replace Roof Top Units	134

Project	Estimated Financial Obligation (\$000s)
Portland: Energy: Upgrade Bldg 155	930
Portland: Energy: Upgrade Base Lighting	660
Puerto: Energy: Repair HVAC Bldg 12	210
RAF Alconbury: Install Energy Efficient Lighting Energy	110
RAF Croughton: Energy Cons: Repair Heating System	635
RAF Lakenheath: Energy Cons: Install High Efficiency Boilers, Multiple Facil	174
RAF Lakenheath: Energy Cons: Install Waste Oil Boilers, Bldg 1108	124
RAF Lakenheath: Energy Cons: Repair Boiler Room Insulation	243
RAF Lakenheath: Energy Cons: Replace High Bay Lighting, Multiple Facilities	246
RAF Mildenhall: Add Efficient Lighting And Controls	266
RAF Mildenhall: B237 Replace Calorifier W/Heat Plate Exchanger	335
RAF Mildenhall: B238 Replace Calorifier W/Heat Plate Exchanger	335
RAF Mildenhall: Convert High Bay Lighting - Phase 2	255
RAF Mildenhall: Convert Outdoor Lighting To Induction	216
RAF Mildenhall: Maintain Bms Phase 1 (Controls+F227 & Commissioning)	621
RAF Mildenhall: Maintain Bms System Phase 2	550
RAF Mildenhall: Maintain Bms System, Phase 3	550
RAF Mildenhall: Energy Cons: Convert High Bay Lighting To Energy Eff Fittings	194
RAF Mildenhall: Energy: Lighting Upgrades & Controls - P2	185
RAF Mildenhall: Energy: Recommission Discrete HVAC Controls	200
RAF Mildenhall: Energy: Repair Pipe Insulation - Basewide	116
Ramstein Air Base: Add Ceiling Mounted Ir Heaters	326
Ramstein Air Base: Energy Cons: Hangar Heating Controls & Door Seals	389
Ramstein Air Base: Energy Cons: Repair Boilers And Controls	583
Ramstein Air Base: Energy Cons: Replace Bay Doors	176
Ramstein Air Base: Energy Cons: Inst. Hot Water Boiler/Admin Ofc	101
Ramstein Air Base: Energy Cons: Replace Cool Roof	270
Ramstein: Energy Cons: Repair High Bay Lights & Sensors	146
Ramstein: Replace Roof & Add Insulation	419
Randolph Air Force Base: Repair Energy Chillers And HVAC Multi-Facilities	630
Randolph Air Force Base: Repair Energy Lighting And Envelope Multi-Facilities	789
Randolph Air Force Base: Upgrade EMCS Basewide	1,550
Robins Air Force Base: Repair/Rpl Steam Traps, Htg Fclty Bldg, B/177	153

Project	Estimated Financial Obligation (\$000s)
Salt Lak: Energy: Upgrade DDC System	362
Schdy Ct: Energy: HVAC Controls B 7 & 8	35
Schdy Ct: Energy: Rep HVAC, Bldgs 2/8	363
Schriever Air Force Base: Leak Detection And Repair Of Natural Gas Lines - Basewide	100
Scott Air Force Base: Lighting Upgrades, Bldg 1600	2,400
Scott Air Force Base: Replace Boilers; Bldgs 40, 1907, 1700	600
Seymour Johnson Air Force Base: Offutt Repair Meters (Elec, Gas, Water), Multi Facs	141
Seymour Johnson Air Force Base: Repair HVAC Systems, Ftd Facility 4403	450
Shaw Air Force Base: Repair Lan-Based Direct Digital Controls Ph2	650
Shaw Air Force Base: Repair Lighting With Energy Efficient, Various Fac - Energy	120
Sheppard Air Force Base: Energy-Install Occupancy Sensor Thermostats	481
Sheppard Air Force Base: Water Efficiency Upgrades Multiple Facilities	560
Sioux: Energy: Repair Boilers, Bldg 261	290
Spangdahlem Ab: Install 4 New 40kw Condensing Oil Boilers, Weather-Seal Large Rollup Doors, Weather Seal Others And Windows.	203
Spangdahlem Ab: Install High Combustion-Efficiency Boilers With Modulation And Parallel Positioning.T.	186
Spangdahlem Ab: Install Hot Water Radiant Heaters In Bldg 364 And Electric Radiant Heaters In Bldg 250.	134
Spangdahlem Ab: Insulation, Lighting And Heating Improvements. Area To Include: Hangar 3, Bldg 101.	87
Spangdahlem Ab: Programmable Thermostat Controls Will Be Added To Keep The Hangars At The Maximum Temperature For Hangar Areas	149
Spangdahlem Ab: Replace 3,116 Magnetic Ballasts In 36 Buildings. Install 165 Occupancy Sensors In 17 Buildings. Add Efficient Lighting At 48 Buildings.	514
Stewart: Energy: Multi Consv Meas	4,250
Stewart: Energy: Repair Exterior Lites	750
Thule Ab - Greenland: Consolidated Af Training & School Class In B201	273
Thule Air Base: Repair Flattop 132, Energy Improvement	350
Thule Air Base: Repair Flattop 203, Energy Improvement	273
Thule Air Base: Repair Flattop 205, Energy Improvement	273
Thule Air Base: Energy Monitoring and Control System	5,615
Tinker Air Force Base: Repair AC And Chillers, Multiple Facilities	720

Project	Estimated Financial Obligation (\$000s)
Tinker Air Force Base: Repair Bay Lighting W/ Energy Eff Lighting, Facility Set 3	3,295
Tinker Air Force Base: Repair Bay Lighting W/ Energy Eff Lighting, Facility Set 1	818
Tinker Air Force Base: Repair By Replacement Heating Systems, Multiple Facilities	929
Tinker Air Force Base: Repair Control Systems On Water Wells And lwtp Plant	499
Tinker Air Force Base: Repair Facility Lighting & Controls With Retrofit	229
Tinker Air Force Base: Repair HVAC By Rebalancing Multiple Facilities	435
Tinker Air Force Base: Repair HVAC Controls, Multiple Facilities	555
Travis Air Force Base: Building Envelope Improvements, Phase 2	1,103
Travis Air Force Base: Install EMCS Equipment, Phase 3	568
Travis Air Force Base: Install Upgrade Lighting In Multi Facs, Phase 2	341
Travis Air Force Base: Energy, Repair Existing EMCS	565
Travis Air Force Base: Retrocommissioning Phase 2	442
Tyndall Air Force Base: Replace HVAC System, Bldg 227	303
Tyndall Air Force Base: Upgrade Electric Motors	170
Tyndall Air Force Base: Upgrade Lighting Ctrls	361
Vance Air Force Base: Energy Cons: Repair HVAC Efficiencies-Multiple Facilities	147
Vance Air Force Base: Energy Cons: Repair Lamp Efficiencies Multiple Facilities	145
W K Kell: Energy: Upgrade EMCS Basewide	520
Westover: Renovation	5,356
Westover: Rx Of Various HVAC Systems	600
Whiteman Air Force Base: Energy: Replace Hi Bay Lights-13 Bldgs	1,223
Whiteman Air Force Base: Energy: Repair B509 Energy Losses: Insulation & Infiltration Ctrl	580
Whiteman Air Force Base: Energy: Repair Inefficient HVAC & Controls In (152,153,1119,3200)	3,263
Wright Patterson Air Force Base: Recaulk Exterior/Windows F/20556	165
Wright Patterson Air Force Base: Recaulk Exterior/Windows F/20558	165
Wright Patterson Air Force Base: Replace Area A Fire Suppression Line - Skeel Ave (W-4)	1,220
Wright Patterson Air Force Base: Replace Steam Line S-166 To F/20622 (Sd-5)	2,300
Wright Patterson Air Force Base: Replace Steam Line S-219 To F/20642	1,545

Project	Estimated Financial Obligation (\$000s)
(Sd-4)	
Wright Patterson Air Force Base: Replace Steam Lines Btw S-229 And Fac 20029 (Sd-11)	2,600
Wright Patterson Air Force Base: Replace Steam Lines From F/10271 To S-461a (Sd-3)	4,450
Wright Patterson Air Force Base: Rpl Steam Lines, Area A (Sd 1,2 & 13)	1,800
Yokota Air Base: Test And Repair Tube Bundles, Various Bldgs	458
Youngstown: Renovation	1,844
Renewable Energy	8,807
Aviano: Install Approximately 134 Kw Heat Pump Geothermal Plant At Bella Vista Bldg #1404	307
Cape Cod: Install two wind turbines	8,500
Water Conservation	10,260
Aviano: Installation System To Use Agriculture Water At Golf Course And Sport Field.	503
Aviano: Replace Existing High Water Consumption Showerheads (2.5 GPM+) With Low Flow Showerheads (< 2.0 GPM)	213
Aviano: Replacement Of Existing Water Loop. Water Meters Installed Where Economically Convenient.	119
Francis E Warren AFB: Maintain Lake Pearson/Install Non-Pot Irrigation	3,197
Grissom: Low Flow Plumbing	110
Hurlburt Field: Construct Elevated Graywater Tank & Distribution System	4,124
Incirlik: Replace Existing Deteriorated Pipes With New Hdpe Pipe	428
Kirtland Air Force Base, NM: Plant Xeriscape	242
Maxwell Air Force Base: Adal Golf Course Irrigation Pumping System	750
RAF Mildenhall: Add Water Efficient Fixtures	181
RAF Mildenhall: Optimizer Mod To Urinals - Basewide	106
Spangdahlem AB: Replace/Enhance 1,089 Water Fixtures In 124 Buildings	287
MARINE CORPS	198,218
Energy Efficiency	184,076
MCAGCC Twentynine Palms: Controls Conversion And Repair Facility 1579	1,065
MCAGCC Twentynine Palms: Repair EMCS, Bldg 1404	1,324
MCAGCC Twentynine Palms: Repair EMCS, Bldg 1411	1,326
MCAGCC Twentynine Palms: Repair EMCS, Bldg 1429	1,327
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1031	262

Project	Estimated Financial Obligation (\$000s)
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1095	266
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1562	436
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1563	311
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1564	481
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1565	293
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1566	436
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1567	294
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1568	294
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1569	285
MCAGCC Twentynine Palms: Replace Existing EMCS Bldg #1570	285
MCAGCC Twentynine Palms: Replace Existing EMCS, Bldg 1342	190
MCAGCC Twentynine Palms: Replace Existing EMCS, Bldg 1561	285
MCAGCC Twentynine Palms: Replace Existing EMCS, Bldg 5419	165
MCAGCC Twentynine Palms: Replace Existing EMCS, Bldg 5702	153
MCAGCC Twentynine Palms: Replace Existing EMCS, Bldg 5703	162
MCAS Beaufort: EMCS Installion In Bldg #418	98
MCAS Beaufort: Repair Bldg #1122, Papa Barracks	1,549
MCAS Beaufort: Replace Laurel Baystreet Lighting	279
MCAS Beaufort: Replace MCAS Beaufort Street Lighting	692
MCAS Cherry Point: Facility Energy Improvements, Bldg 131	175
MCAS Cherry Point: Facility Energy Improvements, Bldg 1795	7
MCAS Cherry Point: Facility Energy Improvements, Bldg 3451	257
MCAS Cherry Point: Facility Energy Repairs, Bldg #199	1,084
MCAS Cherry Point: Facility Energy Repairs, Bldg 131	5,409
MCAS Cherry Point: Facility Energy Repairs, Bldg 1790	803
MCAS Cherry Point: Facility Energy Repairs, Bldg 1795	404
MCAS Cherry Point: Facility Energy Repairs, Bldg 3451	7,667
MCAS Cherry Point: Facility Energy Repairs, Bldg 487	3,713
MCAS Cherry Point: Install Voltage Regulation Equipment In Misc Buildings	462
MCAS Cherry Point: Lighting Replacement, Bldg #1667	171
MCAS Cherry Point: Lighting Replacement, Bldg #3998	181
MCAS Cherry Point: Lighting Replacement, Bldg #4464	121
MCAS Cherry Point: Repair Street Lighting - Central Core Area	877
MCAS Cherry Point: Repair Street Lighting - Housing Area	397
MCAS Cherry Point: Steam And Condensate, Repair Leaks	520

Project	Estimated Financial Obligation (\$000s)
MCAS Cherry Point: Water Conservation Project, Wwtp Bldg 4376	675
MCAS Cherry Point: Water Distribution System Improvements	453
MCAS Cherry Point: Water Distribution System Mixers, Elevated Storage Tanks	515
MCAS Cherry Point: Wireless Communications System For Load Shedding	514
MCAS Iwakuni: Replace Existing Street Lights With High Efficiency LED	1,457
MCAS Iwakuni: Monitoring & Control System Implementation Phase 1	3,082
MCAS Miramar: Boiler Replacement	758
MCAS Miramar: HVAC/DDC Replacement	7,349
MCAS Miramar: Repair Projects From Base Energy Audits	2,564
MCAS Miramar: Replace Boilers At 30 Different Buildings	3,466
MCAS Miramar: Water Conservation Projects From Energy Audit	1,607
MCAS New River: AS114, AS116 & AS118 - Heat And Hot Water Upgrades	120
MCAS New River: AS116 - Heat And Hot Water Upgrades	28
MCAS New River: AS118 - Heat And Hot Water Upgrades	187
MCAS New River: AS122 - Heat And Hot Water Upgrades	161
MCAS New River: AS205 - Heat And Hot Water Upgrades	176
MCAS New River: AS208 - Heat And Hot Water Upgrades	107
MCAS New River: AS211 - Heat And Hot Water Upgrades	221
MCAS New River: AS212 - Heat And Hot Water Upgrades	195
MCAS New River: AS213 - Heat And Hot Water Upgrades	195
MCAS New River: AS214 - Heat And Hot Water Upgrades	227
MCAS New River: AS216 - Heat And Hot Water Upgrades	227
MCAS New River: AS217 - Heat And Hot Water Upgrades	231
MCAS New River: AS222 - Heat And Hot Water Upgrades	169
MCAS New River: AS232 - Heat And Hot Water Upgrades	187
MCAS New River: AS255 - Heat And Hot Water Upgrades	284
MCAS New River: AS302 -- Energy Efficiency Repairs	3,107
MCAS New River: AS312 - Heat And Hot Water Upgrades	119
MCAS New River: AS318 - Heat And Hot Water Upgrades	206
MCAS New River: AS320 - Energy Efficiency Repairs	1,342
MCAS New River: AS4002 & AS4004 - Heat And Hot Water Upgrades	190
MCAS New River: AS4004 - Heat And Hot Water Upgrades	581
MCAS New River: AS4006 - Heat And Hot Water Upgrades	535
MCAS New River: AS4007 - Heat And Hot Water Upgrades	526
MCAS New River: AS4008 - Heat And Hot Water Upgrades	72

Project	Estimated Financial Obligation (\$000s)
MCAS New River: AS4020 - Heat And Hot Water Upgrades	474
MCAS New River: AS4025 - Heat And Hot Water Upgrades	474
MCAS New River: AS4029 & AS4030 - Heat And Hot Water Upgrades	385
MCAS New River: AS4110 - Heat And Hot Water Upgrades	218
MCAS New River: AS4120 - Heat And Hot Water Upgrades	146
MCAS New River: AS4122 - Heat And Hot Water Upgrades	190
MCAS New River: AS4133 - Heat And Hot Water Upgrades	111
MCAS New River: AS4135 - Heat And Hot Water Upgrades	206
MCAS New River: AS4145 - Heat And Hot Water Upgrades	133
MCAS New River: AS4146 - Heat And Hot Water Upgrades	242
MCAS New River: AS4157 - Heat And Hot Water Upgrades	147
MCAS New River: AS4158 - Heat And Hot Water Upgrades	236
MCAS New River: AS4171 - Heat And Hot Water Upgrades	213
MCAS New River: AS4188 - Heat And Hot Water Upgrades	171
MCAS New River: AS424 - Heat And Hot Water Upgrades	314
MCAS New River: AS425 - Heat And Hot Water Upgrades	161
MCAS New River: AS427 - Heat And Hot Water Upgrades	160
MCAS New River: AS502 - Heat And Hot Water Upgrades	170
MCAS New River: AS510 - Heat And Hot Water Upgrades	276
MCAS New River: AS541 - Heat And Hot Water Upgrades	353
MCAS New River: AS545 - Heat And Hot Water Upgrades	238
MCAS Yuma: Additional Work For Yu1240m1 And Yu1241m1	2,464
MCAS Yuma: Bldg 227 System Optimization And Repairs	486
MCAS Yuma: Bldg 406 Chiller Repairs	208
MCAS Yuma: Bldg. 859 HVAC Repair And Renovation	2,082
MCAS Yuma: Bldg. 859 Mechanical Room Construction	397
MCAS Yuma: HVAC Repairs And Controls Optimization Bldg 223	246
MCAS Yuma: HVAC Repairs And Controls Optimization Various Bldgs	1,575
MCAS Yuma: Install Utility Metering Phase Iii	331
MCAS Yuma: Repair HVAC Controls Various Bldgs	725
MCAS Yuma: Repair HVAC System, Bldg 1200	474
MCAS Yuma: Repair HVAC System, Bldg 722	334
MCAS Yuma: Replace HVAC System Bldg. 635	344
MCAS Yuma: Replace HVAC System, Bldg 634	368
MCB Camp Butler: Install Advanced Utility Metering System, Camp Fuji	468

Project	Estimated Financial Obligation (\$000s)
MCB Camp Butler: Install Advanced Utility Meters Bldg 110, Camp Fuji	141
MCB Camp Butler: Install Advanced Utility Meters Bldg 260, Camp Fuji	141
MCB Camp Butler: Install Advanced Utility Meters Bldg 262, Camp Fuji	141
MCB Camp Butler: Install Advanced Utility Meters Bldg 450, Camp Fuji	185
MCB Camp Butler: Install Advanced Utility Meters In 41 Locations, Camp Fuji	1,566
MCB Camp Butler: Relace Chillers At Bldg 1000, Camp Foster	699
MCB Camp Butler: Replace 100-Ton Chiller At At Bldg 2339, Camp Hansen	699
MCB Camp Butler: Replace 100-Ton Chiller At Bldg 496, Camp Foster	699
MCB Camp Butler: Replace 120-Ton Chiller At Bldg 2443, Camp Hansen	819
MCB Camp Butler: Replace 130-Ton Chiller At Bldg 473, Camp Foster	879
MCB Camp Butler: Replace 50-Ton Chiller At Bldg 222, Camp Foster	699
MCB Camp Butler: Replace 50-Ton Chiller At Bldg 4138, Camp Foster	400
MCB Camp Butler: Replace 50-Ton Chiller At Bldg 4225, Camp Courtney	699
MCB Camp Butler: Replace 60-Ton Chiller At Bldg 215, Camp Foster	460
MCB Camp Butler: Replace 60-Ton Chiller At Bldg 4100, Camp Foster	819
MCB Camp Butler: Replace 80-Ton Chiller At Bldg 200, Camp Foster	579
MCB Camp Butler: Replace 80-Ton Chiller At Bldg 4224, Camp Courtney	460
MCB Camp Butler: Replace Chiller At Bldg 2221, Camp Hansen	460
MCB Camp Butler: Replace Chiller At Bldg 4137, Camp Foster	400
MCB Camp Butler: Replace Chiller At Bldg 440, Camp Foster	460
MCB Camp Butler: Replace Chiller At Bldg 4440, Cam Courtney	460
MCB Camp Butler: Replace Chiller At Bldg 4446, Camp Courtney	519
MCB Camp Butler: Replace Chiller At Bldg 4456, Camp Courtney	400
MCB Camp Butler: Replace Chiller At Bldg 459, Camp Foster	400
MCB Camp Butler: Replace Chiller At Bldg 5949, Camp Foster	579
MCB Camp Butler: Replace Chillers At Bldg #5908, Camp Foster	1,059
MCB Camp Lejeune: 10 - Boiler Modifications	216
MCB Camp Lejeune: 101 - Boiler Modifications	95
MCB Camp Lejeune: 102 - Boiler Modifications	95
MCB Camp Lejeune: 111 - Boiler Modifications	95
MCB Camp Lejeune: 119 -- Energy Efficiency Repairs	102
MCB Camp Lejeune: 12 - Boiler Modifications	224
MCB Camp Lejeune: 205 - Boiler Modifications	95
MCB Camp Lejeune: 213 - Boiler Modifications	106
MCB Camp Lejeune: 308 - Boiler Modifications	177

Project	Estimated Financial Obligation (\$000s)
MCB Camp Lejeune: 309 - Boiler Modifications	180
MCB Camp Lejeune: 312 - Boiler Modifications	92
MCB Camp Lejeune: 313 - Boiler Modifications	-
MCB Camp Lejeune: 316 - Boiler Modifications	181
MCB Camp Lejeune: 318 - Boiler Modifications	94
MCB Camp Lejeune: 321 - Boiler Modifications	177
MCB Camp Lejeune: 323 - Boiler Modifications	172
MCB Camp Lejeune: 327 - Energy Efficiency Repairs	1,166
MCB Camp Lejeune: 407 - Boiler Modifications	110
MCB Camp Lejeune: 417 - Boiler Modifications	96
MCB Camp Lejeune: 50 - Energy Efficiency Repairs	211
MCB Camp Lejeune: 507 - Boiler Modifications	96
MCB Camp Lejeune: 511 - Boiler Modifications	274
MCB Camp Lejeune: 59 - Boiler Modifications	144
MCB Camp Lejeune: 6 - Boiler Modifications	229
MCB Camp Lejeune: 63 - Boiler Modifications	198
MCB Camp Lejeune: 8 - Boiler Modifications	226
MCB Camp Lejeune: Hp255 - Energy Efficiency Repairs	1,231
MCB Camp Lejeune: Hp265 - Energy Efficiency Repairs	1,362
MCB Camp Lejeune: LED Street Lighting, Camp Geiger	115
MCB Camp Lejeune: LED Street Lighting, Industrial Area	277
MCB Camp Lejeune: LED Street Lighting, Paradis Point	261
MCB Camp Lejeune: LED Street Lighting, Regimental Area	18
MCB Camp Lejeune: Lighting System Replacement At Various Facilities	307
MCB Camp Lejeune: M100 HVAC And Hot Water Upgrades	69
MCB Camp Lejeune: M101 - Heat And Hot Water Upgrades	281
MCB Camp Lejeune: M104 - Heat And Hot Water Upgrades	208
MCB Camp Lejeune: M105 HVAC And Hot Water Upgrades	100
MCB Camp Lejeune: M112 - Heat And Hot Water Upgrades	128
MCB Camp Lejeune: M113 - Heat And Hot Water Upgrades	144
MCB Camp Lejeune: M116 - Heat And Hot Water Upgrades	98
MCB Camp Lejeune: M123 HVAC And Hot Water Upgrades	115
MCB Camp Lejeune: M124 HVAC And Hot Water Upgrades	105
MCB Camp Lejeune: M128 - Heat And Hot Water Upgrades	285
MCB Camp Lejeune: M129 - Heat And Hot Water Upgrades	303

Project	Estimated Financial Obligation (\$000s)
MCB Camp Lejeune: M130 - Heat And Hot Water Upgrades	214
MCB Camp Lejeune: M131 - Heat And Hot Water Upgrades	177
MCB Camp Lejeune: M132 - Heat And Hot Water Upgrades	221
MCB Camp Lejeune: M139 - Heat And Hot Water Upgrades	608
MCB Camp Lejeune: M301 HVAC And Hot Water Upgrades	114
MCB Camp Lejeune: M303 - Heat And Hot Water Upgrades	189
MCB Camp Lejeune: M305 - Heat And Hot Water Upgrades	276
MCB Camp Lejeune: M307 HVAC And Hot Water Upgrades	83
MCB Camp Lejeune: M309 - Heat And Hot Water Upgrades	48
MCB Camp Lejeune: M311 - Heat And Hot Water Upgrades	250
MCB Camp Lejeune: M313 HVAC And Hot Water Upgrades	174
MCB Camp Lejeune: M316 - Heat And Hot Water Upgrades	112
MCB Camp Lejeune: M318 HVAC And Hot Water Upgrades	94
MCB Camp Lejeune: M319 HVAC And Hot Water Upgrades	113
MCB Camp Lejeune: M321 - Heat And Hot Water Upgrades	131
MCB Camp Lejeune: M323 HVAC And Hot Water Upgrades	97
MCB Camp Lejeune: M324 - Heat And Hot Water Upgrades	371
MCB Camp Lejeune: M326 - Heat And Hot Water Upgrades	101
MCB Camp Lejeune: M402 HVAC And Hot Water Upgrades	67
MCB Camp Lejeune: M405 HVAC And Hot Water Upgrades	56
MCB Camp Lejeune: M406 HVAC And Hot Water Upgrades	60
MCB Camp Lejeune: M407 HVAC And Hot Water Upgrades	106
MCB Camp Lejeune: M408 HVAC And Hot Water Upgrades	105
MCB Camp Lejeune: M412 HVAC And Hot Water Upgrades	87
MCB Camp Lejeune: M413 HVAC And Hot Water Upgrades	96
MCB Camp Lejeune: M416 - Heat And Hot Water Upgrades	143
MCB Camp Lejeune: M418 HVAC And Hot Water Upgrades	122
MCB Camp Lejeune: M420 - Heat And Hot Water Upgrades	235
MCB Camp Lejeune: M422 - Heat And Hot Water Upgrades	229
MCB Camp Lejeune: M424 - Heat And Hot Water Upgrades	374
MCB Camp Lejeune: M435 - Heat And Hot Water Upgrades	476
MCB Camp Lejeune: M440 - Heat And Hot Water Upgrades	460
MCB Camp Lejeune: M445 - Heat And Hot Water Upgrades	426
MCB Camp Lejeune: M450 - Heat And Hot Water Upgrades	429
MCB Camp Lejeune: M455 - Heat And Hot Water Upgrades	355

Project	Estimated Financial Obligation (\$000s)
MCB Camp Lejeune: M457 - Heat And Hot Water Upgrades	359
MCB Camp Lejeune: M458 - Heat And Hot Water Upgrades	359
MCB Camp Lejeune: M508 - Heat And Hot Water Upgrades	296
MCB Camp Lejeune: M602 HVAC And Hot Water Upgrades	89
MCB Camp Lejeune: M603 HVAC And Hot Water Upgrades	59
MCB Camp Lejeune: M604 - Heat And Hot Water Upgrades	201
MCB Camp Lejeune: M607 - Heat And Hot Water Upgrades	275
MCB Camp Lejeune: M609 - Heat And Hot Water Upgrades	279
MCB Camp Lejeune: M611 - Heat And Hot Water Upgrades	139
MCB Camp Lejeune: M614 - Heat And Hot Water Upgrades	192
MCB Camp Lejeune: M616 - Heat And Hot Water Upgrades	192
MCB Camp Lejeune: M621 HVAC And Hot Water Upgrades	133
MCB Camp Lejeune: M622 - Heat And Hot Water Upgrades	185
MCB Camp Lejeune: M90 - Heat And Hot Water Upgrades	75
MCB Camp Pendleton: Install Advanced Electric Meters Basewide	610
MCB Camp Pendleton: Install AMR Natural Gas Meters With Encoder-Receiver-Transmitters	1,514
MCB Camp Pendleton: Install DDC In 16 Facilities	915
MCB Camp Pendleton: Install Variable Frequency Drives 40 Facilities	1,030
MCB Camp Pendleton: Install Window Film	1,609
MCB Camp Pendleton: Repair Air Compressors In 6 Buildings	455
MCB Camp Pendleton: Repair DDC In 16 Facilities	1,139
MCB Camp Pendleton: Replace Existing HID And CFL Wall Packs With LED Wall Packs	353
MCB Camp Pendleton: Replace Existing HID And CFL Wall Packs With LED Wall Packs In 33	949
MCB Camp Pendleton: Replace Existing Pool Filters And Vfds At 13, 14, 33, 41, 43 And	1,278
MCB Camp Pendleton: Replace Existing Roof With Cool Roof On Bldg #1160	777
MCB Camp Pendleton: Replace Natural Gas Pvc Pipe W/Hdpe S Margarita Bridge To 33 Area	2,728
MCB Camp Pendleton: Replace Numerous Existing Water Booster Pumps With Energy Efficient	453
MCB Camp Pendleton: Replace Water Meters With Encoder-Receiver-Transmitters (ERTS).	1,649

Project	Estimated Financial Obligation (\$000s)
MCB Camp Pendleton: Retro Commissioning Of 110 Facilities In Several Areas	300
MCB Camp Pendleton: Retrofit Existing 32 Watt T8 Lamps	576
MCB Camp Pendleton: Retrofit Existing 32 Watt T8 Lamps With Super Efficient 25 Watt T	858
MCB Camp Pendleton: Retrofit Existing HID Street Lights	1,492
MCB Camp Pendleton: Retrofit Existing Wallpacks	525
MCB Camp Pendleton: Retrofit Incandescent Lights In 54 Facilities	337
MCB Hawaii: AC System Repairs, Bldg 1629	732
MCB Hawaii: AC Upgrades And Kitchen Hood Exhaust Controls, B1629	205
MCB Hawaii: Advanced Meter Installation	906
MCB Hawaii: Automated Meter Reading System, Phase 4, MCBH	591
MCB Hawaii: Chiller Replacement, Bldg 1647	611
MCB Hawaii: Exterior Area Lighting LED Upgrades	1,001
MCB Hawaii: HVAC Repairs, Bldg 267	325
MCB Hawaii: HVAC Retrofits, Bldg 267	503
MCB Hawaii: Repair HVAC System, Bldg 1604	1,002
MCB Hawaii: Repair HVAC System, Bldg 1632	1,051
MCB Hawaii: Replace Existing Electric Meters With AMR Meters	470
MCB Quantico: Adv. Metering Infrastructure: Phase 3 - Nat. Gas	1,604
MCB Quantico: Adv. Metering Infrastructure: Phase 4 - Water	1,991
MCB Quantico: Advanced Metering Systems: Phase 2 - Electric Metering	2,758
MCB Quantico: HVAC - Chiller Repair By Replacement In Bldg #2006	525
MCB Quantico: HVAC - Magnetic, Oil-Free Compressor Retrofit In Multiple Bldgs	2,191
MCB Quantico: HVAC - Replace Unit Heaters	65
MCB Quantico: HVAC - Variable Frequency Drives	580
MCB Quantico: Ltg Sys: Efficient Lighting Fixt And Controls In Bldg 26100	138
MCB Quantico: Ltg Sys: Efficient Lighting Fixt And Controls In Bldg 27250	105
MCB Quantico: Ltg Syst: Efficient Lighting Fixtures And Controls In Mult Bldgs	737
MCB Quantico: Water Conservation - Low Flow Faucet Aerators, Showerheads & Flus	572
MCB Quantico: Water Conservation - Low Flow Fixtures - Bldg 2001	91
MCB Quantico: Water Conservation - Low Flow Fixtures - Bldg 2003	98
MCB Quantico: Water Conservation - Low Flow Fixtures - Bldg 2046	98
MCB Quantico: Water Conservation - Low Flow Fixtures - Bldg 2074	97

Project	Estimated Financial Obligation (\$000s)
MCB Quantico: Water Conservation - Low Flow Fixtures - Bldg 3018	91
MCB Quantico: Water Conservation - Low Flow Fixtures - Bldg 5001	114
MCB Quantico: Water Conservation - Low Flow Fixtures - Bldg 5002	96
MCLB Albany: Facility Energy Improvements	1,735
MCLB Albany: Incorporate 33 Bldgs Into Base DDC System	777
MCLB Albany: Incorporate Bldg 10201 Into Base DDC System	121
MCLB Albany: Incorporate Bldg 10202 Into Base DDC System	121
MCLB Albany: Incorporate Bldg 1260 Into Base DDC System	231
MCLB Albany: Incorporate Bldg 1330 Into Base DDC System	136
MCLB Albany: Repair Circuit 20, Central	6,204
MCLB Albany: Repair Circuit 20, Warehouse	3,364
MCLB Albany: Repair Circuit 30	800
MCLB Albany: Repair Circuit 40	2,400
MCLB Albany: Repair Circuit 70	1,568
MCLB Albany: Repair Various Pole And Pad Mounted Transformers	819
MCLB Albany: Replace Street Light Fixtures With LED	3,997
MCLB Albany: Retro-Commissioning Of Bldgs 7450, 7520, And 7600	143
Mcrd Parris Island: Convert Steam B-400	344
Mcrd Parris Island: Convert Steam B-740	260
Mcrd Parris Island: Convert Steam B-923	29
Mcrd Parris Island: LED Street Lighting (Phase 1)	186
Mcrd Parris Island: Repair Envelope & HVAC B-292	105
Mcrd Parris Island: Repair HVAC B-791	68
Mcrd Parris Island: Replace HVAC & Repair Envelope B-151	348
Mcrd Parris Island: Replace HVAC B-113	152
Mcrd Parris Island: Replace HVAC B-450	515
Mcrd Parris Island: Replace HVAC B-700	1,801
Mcrd Parris Island: Upgrade HVAC B-730	870
Mcrd San Diego: Replace Chiller Units-B626	480
Mcsf Blount Island: B-450 Extension Roof Daylighting	110
Mcsf Blount Island: Combined - Daylighting And Fans	210
Mcsf Blount Island: Combined Relamp Hard Stand And Solar Parking Lot Lights	325
Renewable Energy	14,142
MCAGCC Twentynine Palms: Install Photovoltaic System Bldg. 1247 Vehicle Holding Shed	628

Project	Estimated Financial Obligation (\$000s)
MCAGCC Twentynine Palms: Install Photovoltaic System Bldg. 1937 Vehicle Holding Shed	738
MCAGCC Twentynine Palms: Install Photovoltaic System Bldg. 2064 Vehicle Holding Shed	723
MCAGCC Twentynine Palms: Install Photovoltaic System Bldg. 2065 Vehicle Holding Shed	715
MCAGCC Twentynine Palms: Install Photovoltaic System Bldg. 2066 Vehicle Holding Shed	723
MCAS Beaufort: Bldg 1121; Construct Rooftop Pv System	235
MCAS Beaufort: Bldg 1122; Construct Rooftop Pv System	344
MCAS Yuma: Install Solar Pv 1508 (31.25 Kwdc -	559
MCAS Yuma: Install Solar Pv Bldg. 1200 (35kw)	448
MCAS Yuma: Install Solar Pv Bldg. 530	502
MCAS Yuma: Install Solar Pv Sunshade, Bldg 888	321
MCAS Yuma: Install Solar Pv, Bldg. 930	327
MCAS Yuma: Install Solar Sunshade Pv Bldg. 980 (22kw)	387
MCB Camp Lejeune: G550 - Energy Efficiency Repairs	89
MCB Camp Lejeune: HVAC Control And Equipment Replacement At Various Facilities	1,370
MCB Camp Pendleton: Install 34 Electric Vehicle Charging Stations Basewide	683
MCB Camp Pendleton: Install Pv On Bldg #210724	513
MCB Camp Pendleton: Install Pv On Bldg #2238	529
MCB Camp Pendleton: Install Pv On Bldg #2243	529
MCB Camp Pendleton: Install Pv On Bldg #2261 Related To Pe0412m	333
MCB Camp Pendleton: Install Pv On Bldg #2262	529
MCB Camp Pendleton: Install Pv On Bldg #41371	230
MCB Camp Pendleton: Install Pv Solar Thermal 33 Area Pool	424
MCB Camp Pendleton: Swimming Pool (43 Area) Solar Thermal & Electric	506
Mcrd Parris Island: Solar Water Heating Bldg 589	439
Mcrd Parris Island: Solar Water Heating Bldg 591	439
Mcrd Parris Island: Solar Water Heating Bldg 599	439
Mcrd Parris Island: Solar Water Heating Bldg 601	439
DECA	7,193
Energy Efficiency	7,193
Aberdeen Proving Ground: Energy Improvements	2

Project	Estimated Financial Obligation (\$000s)
Altus Air Force Base: Energy Improvements	30
Arnold Air Station: Energy Improvements	24
Bangor International Airport (Ang): Energy Improvements	2
Barksdale Air Force Base: Energy Improvements	40
Beale Air Force Base: Energy Improvements	45
Bolling Air Force Base: Energy Improvements	77
Buckley Air Force Base: Energy Improvements	92
Cannon Air Force Base: Energy Improvements	72
Carlisle Barracks: Energy Improvements	2
CBC Gulfport MS: Energy Improvements	39
Charleston Air Force Base: Energy Improvements	131
Columbus Air Force Base: Energy Improvements	9
Davis-Monthan Air Force Base: Energy Improvements	141
Dover Air Force Base: Energy Improvements	102
Dyess Air Force Base: Energy Improvements	30
Edwards Air Force Base: Energy Improvements	57
Eglin Air Force Base: Energy Improvements	144
Eielson Air Force Base: Energy Improvements	34
Ellsworth Air Force Base: Energy Improvements	91
Fairchild Air Force Base: Energy Improvements	81
Fort Belvoir: Energy Improvements	2
Fort Benning: Energy Improvements	61
Fort Bragg: Energy Improvements	90
Fort Detrick: Energy Improvements	39
Fort Drum: Energy Improvements	127
Fort George G Meade: Energy Improvements	2
Fort Gordon: Energy Improvements	55
Fort Hamilton: Energy Improvements	2
Fort Hood: Energy Improvements	113
Fort Huachuca: Energy Improvements	33
Fort Jackson: Energy Improvements	106
Fort Lee: Energy Improvements	94
Fort Leonard Wood: Energy Improvements	86
Fort McCoy: Energy Improvements	24
Fort Rucker: Energy Improvements	7

Project	Estimated Financial Obligation (\$000s)
Fort Sill: Energy Improvements	83
Fort Stewart: Energy Improvements	55
Fort Wainwright: Energy Improvements	46
Francis E Warren Air Force Base: Energy Improvements	112
Goodfellow Air Force Base: Energy Improvements	58
Grand Forks Air Force Base: Energy Improvements	51
Hanscom Air Force Base: Energy Improvements	84
Harrison Village: Energy Improvements	48
Hickam Air Force Base: Energy Improvements	53
Hill Air Force Base: Energy Improvements	108
Holloman Air Force Base: Energy Improvements	64
Jbphh Pearl Harbor Hawaii: Energy Improvements	62
Joint Base Andrews-Naval Air Facility Washington: Energy Improvements	182
Joint Base Lewis-Mcchord: Energy Improvements	293
Joint Base Myer-Henderson Hall: Energy Improvements	2
Joint Base San Antonio -Fort Sam Houston: Energy Improvements	58
Keesler Air Force Base: Energy Improvements	71
Kirtland Air Force Base: Energy Improvements	109
Langley Air Force Base: Energy Improvements	51
Little Rock Air Force Base: Energy Improvements	9
Los Angeles Air Force Base: Energy Improvements	62
Macdill Air Force Base: Energy Improvements	97
Malmstrom Air Force Base: Energy Improvements	100
Maxwell Air Force Base: Energy Improvements	88
MCAGCC Twentynine Palms CA: Energy Improvements	37
MCAS Cherry Point Nc: Energy Improvements	45
MCAS Miramar: Energy Improvements	123
MCAS Yuma AZ: Energy Improvements	45
MCB Camp Lejeune Nc: Energy Improvements	46
MCB Camp Pendleton CA: Energy Improvements	85
MCB Hawaii Kaneohe: Energy Improvements	63
Mcconnell Air Force Base: Energy Improvements	2
Mcguire Air Force Base: Energy Improvements	13
MCLB Albany Ga: Energy Improvements	18
MCLB Barstow CA: Energy Improvements	19

Project	Estimated Financial Obligation (\$000s)
Mcrd Beaufort Pi Sc: Energy Improvements	9
Mcsptact Kansas City MO: Energy Improvements	20
Moffett Field (NASA): Energy Improvements	23
Moody Air Force Base: Energy Improvements	49
Mountain Home Air Force Base: Energy Improvements	54
NAF El Centro CA: Energy Improvements	14
NAS Corpus Christi TX: Energy Improvements	4
NAS Fallon Nv: Energy Improvements	16
NAS Jacksonville FL: Energy Improvements	7
NAS JRB Ft Worth TX: Energy Improvements	81
NAS JRB New Orleans La: Energy Improvements	12
NAS Key West FL: Energy Improvements	34
NAS Lemoore CA: Energy Improvements	20
NAS Meridian MS: Energy Improvements	49
NAS Oceana VA: Energy Improvements	103
NAS Pensacola FL: Energy Improvements	47
NAS Whidbey Island Wa: Energy Improvements	108
National Training Center And Fort Irwin: Energy Improvements	36
Naval Base Kitsap Bremerton Wa: Energy Improvements	146
Naval Station Great Lakes Il: Energy Improvements	12
Naval Station Newport RI: Energy Improvements	2
Naval Support Activity Crane: Energy Improvements	3
NAVBASE Coronado: Energy Improvements	76
NAVBASE San Diego CA: Energy Improvements	98
NAVBASE Ventura Cty Pt Mugu CA: Energy Improvements	10
NAVSTA Everett Wa: Energy Improvements	2
NAVSTA Mayport FL: Energy Improvements	43
NAVSTA Norfolk VA: Energy Improvements	78
NAVSUPPACT Midsouth Memphis Tn: Energy Improvements	7
NAWS China Lake: Energy Improvements	38
Nellis Air Force Base: Energy Improvements	73
NSA Saratoga Springs Ny: Energy Improvements	37
NSA South Potomac: Energy Improvements	2
Offutt Air Force Base: Energy Improvements	75
Patrick Air Force Base: Energy Improvements	84

Project	Estimated Financial Obligation (\$000s)
Peterson Air Force Base: Energy Improvements	122
Picatinny Arsenal: Energy Improvements	24
Presidio Of Monterey: Energy Improvements	51
Randolph Air Force Base: Energy Improvements	98
Redstone Arsenal: Energy Improvements	47
Robins Air Force Base: Energy Improvements	48
Rock Island Arsenal: Energy Improvements	22
Scott Air Force Base: Energy Improvements	14
Selfridge Ang Base: Energy Improvements	51
Seymour Johnson Air Force Base: Energy Improvements	64
Sheppard Air Force Base: Energy Improvements	65
Subase Kings Bay Ga: Energy Improvements	43
Tinker Air Force Base: Energy Improvements	89
Tobyhanna Army Depot: Energy Improvements	34
Travis Air Force Base: Energy Improvements	60
Tyndall Air Force Base: Energy Improvements	9
USAF Academy: Energy Improvements	83
Vance Air Force Base: Energy Improvements	36
Vandenberg Air Force Base: Energy Improvements	35
West Point Military Reservation: Energy Improvements	57
White Sands Missile Range: Energy Improvements	50
Whiteman Air Force Base: Energy Improvements	62
Yuma Proving Ground: Energy Improvements	29
DFAS	705
Energy Efficiency	705
Limestone: Boiler Replacement	630
Rome: New Lighting Control System	75
DLA	14,621
Energy Efficiency	10,634
Defense Distr Depot San Joaquin: Replace Fire Station Windows	8
Defense Distr Depot San Joaquin: Install Gas Meters	1,709
Defense Distr Depot San Joaquin: Install LED Lights With Photo Cells On Exterior Buildings, Tracy	542
Defense Distr Depot San Joaquin: Install T5 Lights & Sensors - Bldg #3, Tracy	121

Project	Estimated Financial Obligation (\$000s)
Defense Supply Center Columbus: Energy Efficient Lights And Controls	299
Defense Supply Center Columbus: Install Variable Frequency Drives On 4 Major Motors	52
Defense Supply Center Columbus: Retro-Commission HVAC In 700k Square Foot Administrative Building	75
Defense Supply Center Richmond: Bldg #24 Renovation	59
Defense Supply Center Richmond: Bldg #31h 120t Chiller Replacement	90
Defense Supply Center Richmond: Bldg #42 Renovation	350
Defense Supply Center Richmond: Bldg #56 Renovation	340
Defense Supply Center Richmond: Bldg #70 Renovation	70
Defense Supply Center Richmond: Replace 687 Wall Packs With High Efficiency LEDs	719
Defense Supply Center Richmond: Wh 10 Demolition	1,350
Defense Supply Center Richmond: Wh 7 Demolition	1,350
Susquehanna: Bldg #57 Lighting Replacement	332
Susquehanna: Bldg #58 Lighting Replacement	225
Susquehanna: Bldg #59 Lighting Replacment	218
Susquehanna: Bldg #732 Lighting Replacement	395
Susquehanna: Bldg #2001 Roof And HVAC Replacement	2,000
Susquehanna: Boiler Conversion Building #104 From Fuel Oil To Natural Gas	30
Susquehanna: Motion Sensors For Bldg 82, 83, 84, 85 &87	300
Renewable Energy	3,988
Defense Distr Depot San Joaquin: Install Solar Hot Water Heater – Bldg #100	188
Susquehanna: Solar Thermal Heating On Bldg #2001	3,800
Grand Total	998,005

LIST OF NON-GOVERNMENTAL THIRD PARTY FUNDED ENERGY PROJECTS

Project	Estimated Financial Obligation (\$000s)
AIR FORCE	174,271
ESPC	173,792
Tinker	173,792
UESC	479
EXC lighting Controls/NRG Project - Convert T12 to T8 in 48 buildings	307
EXC Motors/NRG Project - Upgrade motor efficiency & convert constant flow systems to VFS using VFD in 26 buildings	172
ARMY	537,615
ESPC	384,080
EPSC Task 1 mod - additional renewable energy	21,339
ESPC Task 2 - water and additional energy programs	34,496
ESPC Task Order 1	37,379
Fort Greely ESPC Phase 1	31,141
Project provides lighting and insulation upgrades throughout the building	337
Task Order 1 includes lighting, water fixtures, variable speed drives, window upgrades and building infiltration reduction	7,639
TO 1	33,005
TO 4	33,815
TO 5	23,907
USAG Humpgreys ESPC Phase 2	28,273
FPI, Fort Buchanan	847
FPI, Camp Parks	1,490
FPI, Fort Hunter Liggett	2,911
USAG Yongsan	36,988
USAG Daegu	27,427
West Point	11,231
Ft Bragg	34,694
Red River Army Depot	14,661
VA ARNG	2,500
UESC	153,535
51 kW PV array	265
Delivery Order # 13 Improvements on 10 Buildings	1,399
Delivery Order # 16, Boiler Tune Up on 89 Buildings	25
Fort Knox Project 109	75,220
Fort Knox Project 110	12,900
Fort Knox Project 111	20,350
Fort Knox Project 112	40,190

Fort Knox Project 113	840
Ft Irwin	1,975
Anniston AD	59
Ft Rucker	312
NAVY	39,413
ESPC	4,395
NAVBASE Point Loma – SPAWAR - TO 2	4,395
UESC	35,018
FY11 UMM NWCF China Lake Superboiler	2,243
HVAC & Lighting for 12 CNIC Bldgs	4,698
SWFLANT UESC Project	5,213
Steam Decentralization	22,864
Grand Total	751,299

APPENDIX I

MILITARY CONSTRUCTION PROJECTS INCORPORATING ASHRAE

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	General Instruction Building	Presidio of Monterey, California	2007	3%	Yes	90.1-2004
Army	Barracks Complex	Wheeler Army Air Field, Hawaii	2007	30%		90.1-2004
Army	Regional SATCOM Support Center	Wheeler AFB, Hawaii	2007	27%	Yes	90.1-2004
Army	SATCOM Facility	Fort Detrick, Maryland	2007	36%		90.1-2004
Army	Barracks Complex	Schofield Barracks, Hawaii	2007	30%		90.1-2004
Army	Joint Personal Effects Depot	Dover Air Force Base, Delaware	2007	30%		90.1-2004
Army	Access Control Point	Detroit Arsenal, Michigan	2007	42%		90.1-2004
Army	Barracks Complex	Schofield Barracks, Hawaii	2007	30%		90.1-2004
Army	Brigade Complex-Headquarters	Hunter Army Air Field, Georgia	2007	31%		90.1-2004
Army	Indoor Range	Fort Carson, Colorado	2007	10%	Yes	90.1-2004
Army	Indoor Range	Fort Lewis, Washington	2007	30%		90.1-2004
Army	Indoor Range	Fort Bragg, North Carolina	2007	12%	Yes	90.1-2004
Army	Barracks Complex	Fort Leavenworth, Kansas	2007	30%		90.1-2004
Army	Reception Station, Phase 1	Fort Benning, Georgia	2007	39%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Vehicle Maintenance Shop	Fort Campbell, Kentucky	2007	<30%	Yes	90.1-2004
Army	Trainee Barracks Complex	Fort Benning, Georgia	2007	32%		90.1-2004
Army	Student Barracks	Fort Bragg, North Carolina	2007	32%		90.1-2004
Army	Brigade Complex, Increment 2	Fort Lewis, Washington	2007	33%		90.1-2004
Army	Maneuver Systems Sustainment Center, Phase 2	Red River Army Depot, Texas	2007	30%		90.1-2004
Army	Battle Command Training Center, Phase 1	Fort Sam Houston, Texas	2007	32%		90.1-2004
Army	Regional Medical Training Facility	Fort McCoy, Wisconsin	2007	33%		90.1-2004
Army	Army Reserve Center	Fort Drum, New York	2007	33%		90.1-2004
Army	Range Control Facility	Fort Hunter Liggett, California	2007	30%		90.1-2004
Army	Army Reserve Center	Naval Air Station, Joint Reserve Base, Fort Worth, Texas	2007	33%		90.1-2004
Army	Army Reserve Center	Butte, Montana	2007	47%		90.1-2004
Army	Simulations Training Facility	Fort Benning, Georgia	2007	37%		90.1-2004
Army	Southern Command Headquarters Facility	Miami Doral, Florida	2007	30%		90.1-2004
Army	Barracks Complex	Hunter Army Air Field, Georgia	2007	38%		90.1-2004
Army	Regional Training Institute	Fort Carson, CO	2007	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Army National Guard Readiness Center	Niantic, Connecticut	2007	30%		90.1-2004
Army	Regional Training Institute	Camp Rell, CT	2007	30%		90.1-2004
Army	Army National Guard Aviation Support Facility	Jacksonville, Florida	2007	30%		90.1-2004
Army	Armed Forces Reserve Center	Marietta, GA	2007	30%		90.1-2004
Army	Armed Forces Reserve Center	Mt. Vernon, IL	2007	30%		90.1-2004
Army	Readiness Center, Add/Alt	Dundal, MD	2007	30%		90.1-2004
Army	Readiness Center, Add/Alt (ADRS)	Methuen, MA	2007	30%		90.1-2004
Army	Armed Forces Reserve Center (JFHQ)	Lincoln, Nebraska	2007	30%		90.1-2004
Army	Army Aviation Support Facility	Lakehurst, NJ	2007	30%		90.1-2004
Army	Readiness Center, Add/Alt	Santa Fe, NM	2007	30%		90.1-2004
Army	Army National Guard Readiness Center	Ontario, Oregon	2007	30%		90.1-2004
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Army National Guard, Huntingdon	2007	30%		90.1-2004
Army	Readiness Center	Anderson, SC	2007	30%		90.1-2004
Army	NW Houston AFRC	Houston, TX	2007	30%		90.1-2004
Army	Armed Forces Reserve Center	Carbondale, IL	2007	30%		90.1-2004
Army	Fort Bliss AFRC	El Paso, TX	2007	30%		90.1-2004
Army	Armed Forces Reserve Center Field Maintenance Shop	Mansfield, OH	2007	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Armed Forces Reserve Center Field Maintenance Shop	Mansfield, OH	2007	30%		90.1-2004
Army	Armed Forces Reserve Center Field Maintenance Shop	Mt. Carmel, TN	2007	Yes		90.1-2004
Army	Armed Forces Reserve Center Field Maintenance Shop, Part 2	Farmingdale, NY	2007	30%		90.1-2004
Army	Armed Forces Reserve Center, PH 2	Birmingham, Alabama	2007	30%		90.1-2004
Army	Readiness Center	Camp Navajo, AZ	2008	30%		90.1-2004
Army	Readiness Center	Florence, AZ	2008	30%		90.1-2004
Army	Readiness Center	Papago Park, AZ	2008	30%		90.1-2004
Army	Combined Support Maintenance Shop	Camp Robinson, AR	2008	30%		90.1-2004
Army	Igloo Storage, Installation	McAlester, Oklahoma	2008	30%		90.1-2004
Army	Youth Activity Center	Fort Polk	2008	40%		90.1-2004
Army	Digital Multipurpose Range Complex	Fort Riley, Kansas	2008	18%	Yes	90.1-2004
Army	High Explosive Magazine, Installation	McAlester, Oklahoma	2008	30%		90.1-2004
Army	General Instruction Building	Presidio of Monterey, California	2008	30%		90.1-2004
Army	Information Systems Facility	Wiesbaden, Germany	2008	30%		90.1-2004
Army	Fire Station/MP Station Biggs	Fort Bliss, Texas	2008	30%		90.1-2004
Army	Child Development Center	Fort Knox, Kentucky	2008	30%		90.1-2004
Army	Forensic Laboratory Expansion	Fort Gillem, Georgia	2008	46%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Mobilization Support Facility	Fort Gordon, Georgia	2008	30%		90.1-2004
Army	Training Aids Support Center	Fort A.P. Hill, Virginia	2008	30%		90.1-2004
Army	Barracks Complex	Fort Hood, Texas	2008	30%		90.1-2004
Army	Child Development Center	Fort Leonard Wood, Missouri	2008	30%		90.1-2004
Army	Training Aids Support Center	Fort Gordon, Georgia	2008	30%		90.1-2004
Army	Readiness Center	Fort Lupton, CO	2008	30%		90.1-2004
Army	Readiness Center	Grand Junction, CO	2008	30%		90.1-2004
Army	Readiness Center	Windsor Locks, CT	2008	30%		90.1-2004
Army	Army Aviation Support Facility, Add/Alt	New Castle, DE	2008	30%		90.1-2004
Army	Readiness Center	Lawrence, IN	2008	30%		90.1-2004
Army	Combined Arms Collective Training Facility, PH I	Muscatatuck, IN	2008	30%		90.1-2004
Army	Readiness Center, Add/Alt	Davenport, IA	2008	30%		90.1-2004
Army	Armed Forces Reserve Center	Minden, LA	2008	30%		90.1-2004
Army	Regional Training Institute PH 1	Bangor, ME	2008	30%		90.1-2004
Army	Readiness Center, Add/Alt	Salisbury, MD	2008	30%		90.1-2004
Army	Army Aviation Support Facility, Add/Alt	Edgewood, MD	2008	30%		90.1-2004
Army	Barracks Replacement PH I	Camp Grayling, MI	2008	30%		90.1-2004
Army	Readiness Center	Arden Hills, MN	2008	30%		90.1-2004
Army	Readiness Center, PH 2	Arden Hills, Minnesota	2008	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Combined Arms Collective Training Facility, Add/Alt	Camp Shelby, Mississippi	2008	30%		90.1-2004
Army	Army National Guard Readiness Center	Mies City, Montana	2008	30%		90.1-2004
Army	Field Maintenance Shop	Queensbury, NY	2008	30%		90.1-2004
Army	Readiness Center	The Dalles, OR	2008	30%		90.1-2004
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Gettysburg, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	East Fallowfield Township, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Field Maintenance Shop, Add/Alter Stryker Brigade Combat Team	Philadelphia, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Readiness Center, Add/Alter Stryker Brigade Combat Team (SBCT)	Kutztown, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Readiness Center, Add/Alter Stryker Brigade Combat Team	Lebanon, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Readiness Center, Add/Alter Stryker Brigade Combat Team (SBCT)	Hanover, Pennsylvania	2008	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Carlisle, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Readiness Center, Alteration Stryker Brigade Combat Team (SBCT)	Philadelphia, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Readiness Center Add/Alter Stryker Brigade Combat Team (SBCT)	Hazleton, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Field Maintenance Shop Stryker Brigade Combat Team	Graterford, Pennsylvania	2008	30%		90.1-2004
Army	Army National Guard Readiness Center	East Greenwich, Rhode Island	2008	30%		90.1-2004
Army	Army National Guard Aviation Support Facility	North Kingstown, Rhode Island	2008	30%		90.1-2004
Army	Readiness Center, Add/Alt	Beaufort, SC	2008	30%		90.1-2004
Army	Armed Forces Reserve Center	Rapid City, SD	2008	30%		90.1-2004
Army	Readiness Center	Tullahoma, TN	2008	30%		90.1-2004
Army	Readiness Center	Ethan Allen Firing Rnge Jericho VT	2008	30%		90.1-2004
Army	Camp Dawson AFRC(Expansion)	Kingwood, WV	2008	30%		90.1-2004
Army	Army National Guard Qualification Training Range	Camp Guernsey, Wyoming	2008	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	ARNG Addition, PH II	Arlington, VA	2008	30%		90.1-2004
Army	HEAT Building	Tullahoma, TN	2008	Yes		90.1-2004
Army	Maintenance Workbay	Milan, TN	2008	Yes		90.1-2004
Army	F A McCorkle Readiness Ctr	Mobile, Alabama	2008	30%		90.1-2004
Army	Aviation Task Force Complex, Phase 2	Fort Wainwright, Alaska	2008	30%		90.1-2004
Army	Building 30/ C4ISR Center	Tobyhanna, Pa	2009	31%		90.1-2004
Army	Readiness Center, PH 2	Fort McClellan TC, AL	2009	30%		90.1-2004
Army	Combined Arms Collective Training Facility	Fort Chaffee, AR	2009	30%		90.1-2004
Army	Readiness Center	Cabot, AR	2009	30%		90.1-2004
Army	Readiness Center, PH 1	Los Alamitos, California	2009	30%		90.1-2004
Army	Combined Arms Collective Training Facility	Camp Roberts, CA	2009	30%		90.1-2004
Army	General Instruction Building	Fort Gordon, Georgia	2009	30%		90.1-2004
Army	General Instruction Building	Fort Gordon, Georgia	2009	30%		90.1-2004
Army	APG, ECIP Solar Tubes	Aberdeen Proving Ground, Md	2009	30%		90.1-2004
Army	CAP 070350, ARRA, MCA - FT. Carson, CO: FY12	Fort Carson	2009	33%		90.1-2004
Army	Family Housing Replacement	Tobyhanna, Pa	2009	20%	Yes	90.1-2004
Army	General Instruction Building	Fort Gordon, Georgia	2009	30%		90.1-2004
Army	HAATS/AASF	Gypsum/Eagle, CO	2009	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Readiness Center	Alamosa, GA	2009	30%		90.1-2004
Army	Multi-Purpose Virtual Training Center	Fort Gordon, Georgia	2009	30%		90.1-2004
Army	Regional Training Institute, PH 4	Camp Blanding, FL	2009	30%		90.1-2004
Army	Readiness Center	Fort Benning	2009	30%		90.1-2004
Army	Readiness Center	Cumming, GA	2009	30%		90.1-2004
Army	Combined Support Maintenance Shop, PH 1	Barrigada, Guam	2009	30%		90.1-2004
Army	Barracks (ORTC)	Gowen Field, ID	2009	30%		90.1-2004
Army	Combined Arms Collective Training Facility	Gowen Fields, Idaho	2009	30%		90.1-2004
Army	Readiness Center	Urbana, IL	2009	30%		90.1-2004
Army	Readiness Center	Cook County, IL	2009	30%		90.1-2004
Army	Combined Support Maintenance Shop, Add/Alt	Springfield, IL	2009	30%		90.1-2004
Army	Combined Arms Collective Training Facility, PH 1b	Muscatatuck, Indiana	2009	30%		90.1-2004
Army	Readiness Center, Add/Alt	Mount Pleasant, IA	2009	30%		90.1-2004
Army	Armed Forces Reserve Center	Wichita East, KS	2009	30%		90.1-2004
Army	Field Maintenance Shop	Wichita East, KS	2009	30%		90.1-2004
Army	Aviation Operations Facility PH3	London, KY	2009	30%		90.1-2004
Army	Tactical Unmanned Aircraft System Facility	Fort Polk, LA	2009	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Tactical Unmanned Aircraft System Facility	Webster Field, MD	2009	30%		90.1-2004
Army	Armed Forces Reserve Center (JFHQ)	Hanscom AFB, Massachusetts	2009	30%		90.1-2004
Army	Readiness Center, Add/Alt	Westfield, MA	2009	30%		90.1-2004
Army	Combined Arms Collective Training Facility	Camp Grayling, MI	2009	30%		90.1-2004
Army	Tactical Unmanned Aircraft System Facility	Camp Ripley, MN	2009	30%		90.1-2004
Army	Readiness Center, Add/Alt	Boonville, Missouri	2009	30%		90.1-2004
Army	Army National Guard Readiness Center	Helena, MT	2009	30%		90.1-2004
Army	Readiness Center	Mead, NE	2009	30%		90.1-2004
Army	Readiness Center. Add/Alt	Lincoln, NE	2009	30%		90.1-2004
Army	Readiness Center, Add/Alt	Elko (Carlin), OH	2009	30%		90.1-2004
Army	Readiness Center	North Las Vegas, Nevada	2009	30%		90.1-2004
Army	Classroom Facility (Regional Training Institute)	Pembroke, NH	2009	30%		90.1-2004
Army	Barracks Facility (Regional Training Institute)	Pembroke, NH	2009	30%		90.1-2004
Army	Readiness Center, Add/Alt	Camp Grafton, ND	2009	30%		90.1-2004
Army	Barracks	Camp Perry, OH	2009	30%		90.1-2004
Army	Barracks	Ravenna, OH	2009	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Holidaysburg, Pennsylvania	2009	30%		90.1-2004
Army	Readiness Center, Add/Alt	Honesdale , PA	2009	30%		90.1-2004
Army	United States Property and Fiscal Office	East Greenwich, RI	2009	30%		90.1-2004
Army	Field Maintenance Shop, PH I	Florence, SC	2009	30%		90.1-2004
Army	Army Aviation Support Facility, Add/Alt	Eastover, South Carolina	2009	30%		90.1-2004
Army	Army Aviation Support Facility	Greenville, South Carolina	2009	30%		90.1-2004
Army	Readiness Center, Add/Alt	Allendal, SC	2009	30%		90.1-2004
Army	Readiness Center	Watertown, SD	2009	30%		90.1-2004
Army	Barracks/Dining/Admin & Parking Complex, PH I	Camp Rapid, SD	2009	30%		90.1-2004
Army	Combined Arms Collective Training Facility	Fort Pickett, VA	2009	30%		90.1-2004
Army	Regional Training Institute, PH I	St. Croix, Virgin Islands	2009	30%		90.1-2004
Army	Readiness Center (JFHQ)	St. Croix, VI	2009	30%		90.1-2004
Army	Combined Support Maintenance Shop	Tacoma, WA	2009	30%		90.1-2004
Army	Elkins AFRC	Elkins, WV	2009	30%		90.1-2004
Army	Readiness Center	Morgantown, WV	2009	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	Jackson County AFRC	Millwood, WV	2009	30%		90.1-2004
Army	Readiness Center	Moorefield, WV	2009	30%		90.1-2004
Army	Joint Interagency Tng Facility	Kingwood, WV	2009	30%		90.1-2004
Army	Joint Operation Center	Kingwood, WV	2009	30%		90.1-2004
Army	Multi-Purpose Building, PH II	Camp Dawson, WV	2009	30%		90.1-2004
Army	RTI Expansion Phase 2(JITEC)	Kingwood, WV	2009	30%		90.1-2004
Army	Field Maintenance Shop	Laramie, WY	2009	30%		90.1-2004
Army	Lock Haven Unheated Strg Bldg	Lock Haven, PA	2009	30%		90.1-2004
Army	Dyess AFB AFRC	Abilene, TX	2009	30%		90.1-2004
Army	FY11 Battle Sims training Support Center	Fort Carson	2010	32%		90.1-2004
Army	LEE MCA PN 036113 AIT BARRACKS COMPLEX PH6	Fort Lee	2010	30%		90.1-2004
Army	Div HQ/82nd Airborne Div	Fort Bragg	2010	30%		90.1-2004
Army	Trainee Barracks Complex 3 Incr 1	Fort Leonard Wood	2010	0%	Yes	90.1-2004
Army	Advanced Individual Training Barracks	Fort Gordon, Georgia	2010	30%		90.1-2004
Army	FY11 Barracks Complex Phase 1	Presidio of Monterey, California	2010	30%		90.1-2004
Army	FTG127 PN055873 Fire Station	Fort Greely	2010	0%	Yes	90.1-2004
Army	FY13 MCA PN57394 200-PN UEPH BARRACKS, SB	Schofield Barracks	2010	0%	Yes	90.1-2004
Army	Mout Collective Training Facility	Fort Knox	2010	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Army	APG, Analytical Chem Wing-Advanced Chem Lab	Aberdeen Proving Ground, Md	2010	0%	Yes	90.1-2004
Army	FTW360 1+1 Barracks	Fort Wainwright	2010	0%	Yes	90.1-2004
Army	Detrick, Community Support Center	Fort Detrick	2010	30%		90.1-2004
Army	LIC: 40540, Aviation Component Maintenance Shop	Fort Rucker	2010	0%	Yes	90.1-2004
Army	FTH FYLR FIRE STATION TWO COMPANY	Fort Huachuca	2010	30%		90.1-2004
Army	General Instruction Building	Fort Gordon, Georgia	2010	30%		90.1-2004
Army	Construction of new Barrack FY011	Honduras Various	2010	0%	Yes	90.1-2004
Army	FTR251 PN061561 Brigade Combat Team, Ph 1	Fort Richardson	2010	0%	Yes	90.1-2004
Army	Design and construct security towers at MOTSU	Military Ocean Terminal, Sunny Point Nc	2010	0%	Yes	90.1-2004
Army	FTR266 Railhead Ops Fac	Fort Richardson	2010	0%	Yes	90.1-2004
Army	Trainee Barracks Complex 6, Ph 2	Fort Leonard Wood	2010	0%	Yes	90.1-2004
Army	Dog Kennel Facility	Fort Stewart	2010	40%		90.1-2004
Army	Rail Loading Facility Expansion	Fort Benning	2010	30%		90.1-2004
Army	FTW371 Stryker BCT Complex	Fort Wainwright	2010	0%	Yes	90.1-2004
Army	Belvoir, Admin Facs Army Agencies	Fort Belvoir	2010	0%	Yes	90.1-2004
Army	Brigade Complex	Fort Campbell	2010	0%	Yes	90.1-2004

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Army	Camden NJ BRAC AFR Ctr/OMS/Unh Stg	Camden, Nj	2010	30%		90.1-2004
Army	Access Control Building	Fort Riley	2010	0%	Yes	90.1-2004
Army	Battle Command Training Center (BCTC) - (PN 64815)	Fort Sill	2010	0%	Yes	90.1-2004
Army	Brigade Trans 1 BCT	Fort Riley	2010	33%		90.1-2004
Army	Engineer Combat Bn	Fort Riley	2010	33%		90.1-2004
Army	Operational Readiness Training Complex	Fort Hood	2010	0%	Yes	90.1-2004
Army	FY11 MCA PN65650 USARPAC Cmd & Cntrl Complex, Ph 1, FS	Fort Shafter	2010	30%		90.1-2004
Army	Attack Aviation BN Cpx	Fort Riley	2010	0%	Yes	90.1-2004
Army	FY11 AP HILL MCA PN 65790 DEMOLITION RANGE	Fort A P Hill	2010	30%		90.1-2004
Army	FTR333 Combat Pistol Qualify Range	Fort Richardson	2010	0%	Yes	90.1-2004
Army	FY10 EUSTIS PN66714 AIT Training Complex PH I	Fort Eustis	2010	48%		90.1-2004
Army	Picatinny - Ballistic Evaluation Facility Ph 2 (PN066726)	Picatinny Arsenal	2010	0%	Yes	90.1-2004
Army	APG, Auto Technology Evaluation Fac, Ph 3	Aberdeen Proving Ground, Md	2010	0%	Yes	90.1-2004
Army	FTW357 Aviation Task Force Complex, Ph 3	Fort Wainwright	2010	30%		90.1-2004

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Army	Modif Record Fire Range	Fort Stewart	2010	30%		90.1-2004
Army	FY08 MCA PN67169 Child Dev Ctr 0-5, SB	Schofield Barracks	2010	0%	Yes	90.1-2004
Army	FY13 MCA PN67188 Consolidated Motorpool, Phase 2, FS	Fort Shafter	2010	0%	Yes	90.1-2004
Army	FY13 MCA PN67189 Consolidated Motorpool, Phase 3, FS	Fort Shafter	2010	0%	Yes	90.1-2004
Army	APG C4ISR, Phase 2 Increment 2	Aberdeen Proving Ground, Md	2010	30%		90.1-2004
Army	FTG135 Facility Energy Improvements	Fort Greely	2010	0%	Yes	90.1-2004
Army	Greensboro NC Army Reserve Center/Land	Greensboro, NC	2010	30%		90.1-2004
Army	NCO Academy Phase II	Fort McCoy	2010	30%		90.1-2004
Army	Annual Training/Mobilization Barracks	Fort McCoy	2010	30%		90.1-2004
Army	Orangeburg, SC Army Reserve Center/Land	Orangeburg, SC	2010	30%		90.1-2004
Army	Bryan TX Army Reserve Center/Land	Bryan, TX	2010	30%		90.1-2004
Army	Homewood IL Add/Alt Army Reserve Center	Homewood, IL	2010	30%		90.1-2004
Army	Barracks Complex	Fort Sam Houston	2010	0%	Yes	90.1-2004
Army	Training Barracks	Fort Leonard Wood	2010	0%	Yes	90.1-2004

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Army	FTW362 Facility Energy Improvements	Fort Wainwright	2010	0%	Yes	90.1-2004
Army	GTA Rio Grande City, TX Army Reserve Center/Land	Rio Grand, TX	2010	30%		90.1-2004
Army	GTA Chester/Newtown Square Army Reserve Center	James W Reese USARC, PA	2010	30%		90.1-2004
Army	GTA Panama City FL Army Reserve Center/Land	George P Wentworth USARC	2010	30%		90.1-2004
Army	GTA West Palm Beach FL Army Reserve Center/Land	Elliott Babcock Memorial AFRC	2010	30%		90.1-2004
Army	Concord, CA (Fairfield) Army Reserve Center	Concord, CA	2010	30%		90.1-2004
Army	GTA Caguas/Puerto Nuevo ARC	Juan Ponce de Leon Armory	2010	30%		90.1-2004
Army	GTA Las Cruces, NM Army Reserve Center/Land	La Cruces, NM	2010	30%		90.1-2004
Army	GTA Binghamton, NY (Utica) Army Reserve Center/Land	Binghamton, NY (Utica)	2010	40%		90.1-2004
Army	GTA Orlando Army Reserve Center	Orlando, FL	2010	30%		90.1-2004
Army	GTA Michigan City, IN Army Reserve Center/Land	Michigan City, IN	2010	30%		90.1-2004
Army	GTA Uniontown Pa Army Reserve center	Uniontown USARC/AMSA 104 SS 2 (G)	2010	30%		90.1-2004

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Army	Unmanned Aerial Systems, Fort Hood, TX	Fort Hood	2010	0%	Yes	90.1-2004
Army	1 UAS Unit	Fort Stewart	2010	30%		90.1-2004
Army	UAS	Fort Bragg	2010	30%		90.1-2004
Army	LIC: 40538, Repair Bays, DOL/DPW/IMMA/IMMD	Fort Rucker	2010	0%	Yes	90.1-2004
Army	Training Aids Center	Fort Rucker	2010	0%	Yes	90.1-2004
Army	Hospital Add/Alt	Fort Campbell	2010	30%		90.1-2004
Army	Ft Drum - Health Clinic Add/Alt (PN 070579)	Fort Drum	2010	0%	Yes	90.1-2004
Army	Ft Drum - Dental Clinic Add/Alt (PN 070580)	Fort Drum	2010	0%	Yes	90.1-2004
Army	GTA San Marcos, TX Army Reserve Center	San Marcos Memorial USARC	2010	39%		90.1-2004
Army	GTA Quincy, IL Army Reserve Center/Land	Quincy, IL	2010	34%		90.1-2004
Army	GTA Roanoke, VA Army Reserve Center/Land	Roanoke, VA	2010	30%		90.1-2004
Army	Tactical Equipment Maintenance Facility	Fort Bragg	2010	30%		90.1-2004
Army	Meade, Infrastructure Improvements	Fort Meade	2010	0%	Yes	90.1-2004
Army	FY11 LEE PN 71114 TRAINING SUPPORT CENTER	Fort Lee	2010	0%	Yes	90.1-2004

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Army	071119 Training Aids Center FY11	Fort Jackson	2010	0%	Yes	90.1-2004
Army	Virtual TADDS Fac 1	Fort Stewart	2010	30%		90.1-2004
Army	GTA Rochester Army Reserve Center/Land	James W Wadsworth USARC	2010	30%		90.1-2004
Army	GTA Cape Coral, FL (Ft. Meyers) Army Reserve Center/Land	Cape Coral, FL / Ft. Meyers	2010	30%		90.1-2004
Army	GTA Denton TX Army Reserve Center/Land	Denton, TX	2010	30%		90.1-2004
Army	Family Life Center	Fort Hood	2010	0%	Yes	90.1-2004
Army	Operations Facility	Fort Stewart	2010	30%		90.1-2004
Army	Devens Automated Record Fire (ARF) Range	Devens Reserve Forces Training Area, Ayer, MA	2010	30%		90.1-2004
Army	Shoothouse	Fort Campbell	2010	0%	Yes	90.1-2004
Army	Ft Drum - Indoor Rifle Range (PN 071727)	Fort Drum	2010	0%	Yes	90.1-2004
Army	Unit Operations - JLENS	Fort Bliss	2010	30%		90.1-2004
Army	DOIM Information Systems Facility	Fort McCoy	2010	30%		90.1-2004
Army	Construct a standar-design combat support Brigade Headquarters	Fort Leonard Wood	2010	0%	Yes	90.1-2004
Army	FY10 MMCA PN72067 Engineer Maintenance Fac, Kwajalein	Kwajalein Atoll	2010	100%		90.1-2004
Army	Rappelling Training Area	Fort Lewis	2010	0%	Yes	90.1-2004

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Army	ECS Tac Equip Maint Fac	Fort Hunter Liggett	2010	30%		90.1-2004
Army	ECS Warehouse	Fort Hunter Liggett	2010	30%		90.1-2004
Army	UEPH Housing for Engr BN	White Sands Missile Range	2010	0%	Yes	90.1-2004
Army	Company Operations Facilities	Fort Bliss	2010	0%	Yes	90.1-2004
Army	Infantry Battle Course	Fort Stewart	2010	30%		90.1-2004
Army	Center Upgrade	Fort Stewart	2010	30%		90.1-2004
Army	Camp Park TASS Training Center (TTC)	Camp Parks	2010	30%		90.1-2004
Army	Benning Barracks Incr 2	Fort Benning	2010	0%	Yes	90.1-2004
Army	Classrooms & BN Dining Fac -28	Fort Benning	2010	0%	Yes	90.1-2004
Army	Benning Classrooms & BN Dng Fac 29	Fort Benning	2010	0%	Yes	90.1-2004
Army	FY12 MCA 072650 BARRACKS AND VMF, CP CARROLL	Camp Carroll, Korea	2010	0%	Yes	90.1-2004
Army	THAAD BATTERY	Fort Bliss	2010	30%		90.1-2004
Army	Commissary	Miami, FL	2010	0%	Yes	90.1-2004
Army	AEN, 73236, Temp Housing Ph 1 - Altimur	Afghanistan Various	2010	0%	Yes	90.1-2004
Army	FY11 LEE MCA PN 73298 Company Operations Facility	Fort Lee	2010	0%	Yes	90.1-2004
Army	CAP 073299 Trainee Barracks FY11	Fort Jackson	2010	0%	Yes	90.1-2004
Army	AEN, 73389, Troop Housing (2130 PAX) - BAF	Afghanistan Various	2010	0%	Yes	90.1-2004

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Army	FTW365 Simulator Building	Fort Wainwright	2010	0%	Yes	90.1-2004
Army	Lab and Test Building, General Purpose	White Sands Missile Range	2010	0%	Yes	90.1-2004
Army	PHYSICS LAB	White Sands Missile Range	2010	0%	Yes	90.1-2004
Army	CAP 073686 JLENS Battery I Phase 1 (TEMF)	Fort Bliss	2010	0%	Yes	90.1-2004
Army	JLENS Tactical Training Facility	Fort Bliss	2010	0%	Yes	90.1-2004
Army	PN073746 Physical Fitness Facility	Fort Shafter	2010	100%		90.1-2004
Army	Vehicle Maintenance Shop	Fort Leavenworth	2010	0%	Yes	90.1-2004
Army	FTR275 Multipurpose Machine Gun Range	Fort Richardson	2010	0%	Yes	90.1-2004
Army	Student Barracks	Fort Bragg	2010	30%		90.1-2004
Army	Carlisle, General Instruction Building	Carlisle Barracks	2010	30%		90.1-2004
Army	Belton, MO - Army Reserve Center/Land	Independence, MO	2010	30%		90.1-2004
Army	Ft. Hill, VA Army Reserve Center/Land	Ft. Hill, VA	2010	30%		90.1-2004
Army	GTA Macon, GA Army Reserve Center/Land	Macon, GA	2010	30%		90.1-2004
Army	Tallahassee, FL Army Reserve Center/Land	Tallahassee, FL	2010	45%		90.1-2004

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Army	Child Development Center-Under 6 Years Age	Fort Polk	2010	0%	Yes	90.1-2004
Army	LIC: 38233 - PN: 074550, Access Control Building	Redstone Arsenal	2010	0%	Yes	90.1-2004
Army	THAAD Battery Complex, Ph 1	Fort Bliss	2010	0%	Yes	90.1-2004
Army	Repair Barracks, Bldg 2762	Fort Benning	2010	0%	Yes	90.1-2004
Army	FTW364 Religious Education Facility	Fort Wainwright	2010	0%	Yes	90.1-2004
Army	Belvoir, Fire Station	Fort Belvoir	2010	0%	Yes	90.1-2004
Army	Aircraft Direct Fueling Facility	Fort Riley	2010	0%	Yes	90.1-2004
Army	APG, Fire Station	Aberdeen Proving Ground, Md	2010	0%	Yes	90.1-2004
Army	Dining Facility	Fort Bragg	2010	30%		90.1-2004
Army	Central Receiving Warehouse Replacement	Fort Leonard Wood	2010	0%	Yes	90.1-2004
Army	Corpus Christi (Robstown) Tactical Equipment Maintenance Fac	Comstock, Us Border Patrol Station	2010	30%		90.1-2004
Army	FTW363 Family Housing Replacement Construction	Fort Wainwright	2010	0%	Yes	90.1-2004
Army	Sensitive Compartmented Information Facility	Fort Stewart	2010	40%		90.1-2004
Army	Infrastructure Support, Incr 3	Fort Benning	2010	30%		90.1-2004
Army	Install EMCS System	Fort Riley	2010	0%	Yes	90.1-2004
Army	KAFB - 076184, Ready Building	Kirtland Air Force	2010	30%		90.1-2004

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		Base				
Army	FY13 MCA 076196 Company Ops Facility, USAG Humphreys		2010	0%	Yes	90.1-2004
Army	FY12 MCA PN 076235 Barracks W/DFAC, CP Henry/George	Camp Henry/George, Korea	2010	0%	Yes	90.1-2004
Army	Physical Fitness Facility		2010	0%	Yes	90.1-2004
Army	Family Housing New Construction	Fort McCoy	2010	0%	Yes	90.1-2004
Army	Police/MP Station	White Sands Missile Range	2010	0%	Yes	90.1-2004
Army	Ft. Gordon RTS-MED Training Classroom	Austin USARC	2010	30%		90.1-2004
Army	Readiness Center	North Colorado Springs, CO	2010	30%		90.1-2004
Army	Readiness Center	Windsor, CO	2010	30%		90.1-2004
Army	TUAS Addition/ Alteration, BAFB	Aurora, CO	2010	30%		90.1-2004
Army	Regional Training Institute	Bethany Beach, DE	2010	30%		90.1-2004
Army	Armed Forces Reserve Center	New Castle, DE	2010	30%		90.1-2004
Army	Hunter Readiness Center	Hunter Army Air Field, Georgia	2010	30%		90.1-2004
Army	Delta Co.	Barrigada, Guam	2010	30%		90.1-2004
Army	HI-ARNG Brigade Readiness Center	Kalaeloa, HI	2010	30%		90.1-2004
Army	Readiness Center, Add/Alt	Iowa Falls, IA	2010	30%		90.1-2004
Army	AASF, Add/Alt	Boone, IA	2010	30%		90.1-2004
Army	New USPFO	Camp Dodge, IA	2010	30%		90.1-2004

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Army	FMS Add/Alt	Fairfield, IA	2010	30%		90.1-2004
Army	MVSB	Bld S-70, Camp Dodge, IA	2010	30%		90.1-2004
Army	Readiness Center	Owensboro, Ky.	2010	30%		90.1-2004
Army	JSO Phase IV	London, KY	2010	30%		90.1-2004
Army	Readiness Center	Burlington, Ky	2010	30%		90.1-2004
Army	Dining Facilities Add/Alt	Fort Harrison, Montana	2010	30%		90.1-2004
Army	Readiness Center	Grand Island, NE	2010	30%		90.1-2004
Army	Readiness Center (Titan)	Mead, NE	2010	30%		90.1-2004
Army	Readiness Center, Add/Alt	Farmington, NM	2010	30%		90.1-2004
Army	Unit Training Equipment Site (UTES) Add/Alt	Camp Grafton, ND	2010	30%		90.1-2004
Army	Williamsport AFRC	Williamsport, PA	2010	30%		90.1-2004
Army	USPFO	Smyrna, TN	2010	Yes		90.1-2004
Army	Buckhannon, AFRC	Buckhannon, WV	2010	30%		90.1-2004
Army	Fairmont AFRC	Fairmont, WV	2010	30%		90.1-2004
Army	Field Maintenance Facility	Wausau, Wisconsin	2010	30%		90.1-2004
Army	Tactical Unmanned Aircraft System Facility	Camp Williams, Wisconsin	2010	30%		90.1-2004
Army	Catoosa Barracks	Tunnel Hill, GA	2010	Yes		90.1-2004
Army	Catoosa Barracks	Tunnel Hill, GA	2010	Yes		90.1-2004
Army	Catoosa Barracks	Tunnel Hill, GA	2010	Yes		90.1-2004
Army	Catoosa Barracks	Tunnel Hill, GA	2010	Yes		90.1-2004

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Army	Catoosa Barracks	Tunnel Hill, GA	2010	Yes		90.1-2004
Army	DDESS NC DSO	Fort Bragg	2010	30%		90.1-2004
Army	Johnstown Low Bow Training Bldg	Johnstown, PA	2010	30%		90.1-2004
Army	Bradford Unheated Strg Bldg	Bradford, PA	2010	30%		90.1-2004
Army	Organization Strg Bld	Cambridge Springs, PA	2010	30%		90.1-2004
Army	Maintenance Workbay	Russellville, TN	2010	Yes		90.1-2004
Army	Lauris D Grave Readiness Ctr	Talladega, Alabama	2010	30%		90.1-2004
Army	Milan Readiness Center Add/Alt	Milan, IL	2010	30%		90.1-2004
Army	New Elementary School @ Stewart	Fort Stewart	2010	40%		90.1-2004
Army	Readiness Center	Bethel, AK	2011	30%		90.1-2004
Army	Battle Simulation Center	Fort Stewart	2011	30%	Yes	90.1-2004
Army	Readiness Center	Florence, AZ	2011	30%		90.1-2004
Army	Preventive Medicine Facility	Fort Lewis	2011	30%		90.1-2004
Army	Brks Cplx/3rd BDE - PH III	Fort Bragg	2011	40%		90.1-2004
Army	Brks Cplx/3d BDE - PH IV	Fort Bragg	2011	40%		90.1-2004
Army	MEADE, SATCOM Operations Center	Fort Meade	2011	30%		90.1-2004
Army	Child Development Center	Fort Gordon, Georgia	2011	30%		90.1-2004
Army	Enlisted Unaccompanied Personnel Housing	Fort Polk	2011	40%		90.1-2004
Army	Tactical Unmanned Aircraft System Facility	Twentynine Palms, CA	2011	30%		90.1-2004

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Army	DETRICK, Information Services Facility	Fort Detrick	2011	30%		90.1-2004
Army	3rd ID BDE Combat Team Cplx	Fort Benning	2011	32%		90.1-2004
Army	Barracks, 1st BCT	Fort Bragg	2011	30%		90.1-2004
Army	Integrated Theater Sig Btl	Fort Lewis	2011	30%		90.1-2004
Army	Co Ops Roundout /Fires BDE	Fort Bragg	2011	30%		90.1-2004
Army	SOF Company Support Facility	Fort Benning	2011	35%		90.1-2004
Army	MEADE, 100 Meter Indoor Range	Fort Meade	2011	30%		90.1-2004
Army	SOF C4 Facility - JSOC	Fort Bragg	2011	30%		90.1-2004
Army	SOF Operations Support Facility	Fort Bragg	2011	30%		90.1-2004
Army	SOF Operational Communications Facility - JCU	Fort Bragg	2011	30%		90.1-2004
Army	APG, Auto Tech Evaluate Facility Ph 2	Aberdeen Proving Ground, Md	2011	30%		90.1-2004
Army	108th ADA Cmplx/Veh Maint	Fort Bragg	2011	30%		90.1-2004
Army	Eng BN Cpx	Fort Carson	2011	33%		90.1-2004
Army	Battle Command Training Center	Fort Sam Houston	2011	30%		90.1-2004
Army	DETRICK, NIBC Security Fencing and Equipment	Fort Detrick	2011	30%		90.1-2004
Army	DETRICK, Water Treatment Plant Repair	Fort Detrick	2011	30%		90.1-2004
Army	DETRICK, Supplemental Water Storage	Fort Detrick	2011	30%		90.1-2004

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Army	Advanced Individual Training Complex Barracks 1 PH2	Fort Leonard Wood	2011	30%		90.1-2004
Army	Technical Unmanned Aerial Vehicle Maintenance Operation Faci	Fort Carson	2011	30%		90.1-2004
Army	Battalion Complex	Fort Hood	2011	41%		90.1-2004
Army	Company Operations Facilities	Fort Hood	2011	41%	Yes	90.1-2004
Army	Brigade Complex	Fort Hood	2011	40%	Yes	90.1-2004
Army	Automated Infantry Squad Battle Course	Fort Riley	2011	31%		90.1-2004
Army	Tactical Vehicle Wash Rack	Fort Hunter Liggett	2011	30%		90.1-2004
Army	Ambulatory Care Center, Phase 2	Joint Base San Antonio	2011	30%		90.1-2004
Army	Regional Logistic Spt Complex Warehouse	Fort Lewis	2011	35%		90.1-2004
Army	Unmanned Aerial System (UAS) Hangar	Fort Hood	2011	25%	Yes	90.1-2004
Army	Regional Logistic Support Complex	Fort Lewis	2011	35%		90.1-2004
Army	Battalion Headquarters	Fort Carson	2011	35%		90.1-2004
Army	DETRICK, Consolidated Logistics Facility	Fort Detrick	2011	30%		90.1-2004
Army	Vehicle Maintenance Shop	Fort Bragg	2011	30%		90.1-2004
Army	SOF JIB and AVTEG Annex	Fort Bragg	2011	30%		90.1-2004
Army	Police/MP Station	White Sands Missile	2011	40%		90.1-2004

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		Range				
Army	Ft. Buchanan, PR Engineering/Housing Maintenance Shop	Fort Buchanan	2011	30%		90.1-2004
Army	Millington, TN TEMF/AMSA	Millington, TN	2011	30%		90.1-2004
Army	United States Property and Fiscal Office, Add/Alt	Washington, DC	2011	30%		90.1-2004
Army	Dobbins Bldg 555 ADD ALT	Dobbins ARB, GA	2011	30%		90.1-2004
Army	Combined Support Maintenance Shop Ph2A	Barbers Point NAS, HI	2011	30%		90.1-2004
Army	TUAS	Mountain Home, ID	2011	30%		90.1-2004
Army	Readiness Center	Kankakee, IL	2011	30%		90.1-2004
Army	Army Aviation Support Facility	Kankakee, IL	2011	30%		90.1-2004
Army	Readiness Center	Northern Kentucky, KY	2011	30%		90.1-2004
Army	Regional Training Institute PH 2	Bangor, Maine	2011	30%		90.1-2004
Army	Field Maintenance Shop	Arden Hills, MN	2011	30%		90.1-2004
Army	FMS	Mankato, MN	2011	40%		90.1-2004
Army	ORTC Complex (NGMC)	Camp Shelby, MS	2011	29%	Yes	90.1-2004
Army	Deployment Processing Center	Camp Shelby, MS	2011	36%		90.1-2004
Army	ORTC Complex (Army)	Camp Shelby, MS	2011	29%	Yes	90.1-2004
Army	Troop Medical Add/Alt	Fort Harrison, Montana	2011	30%		90.1-2004

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Army	Stormville Combined Support Maintenance Shop	Stormville, NY	2011	30%		90.1-2004
Army	Tactical Unmanned Aircraft System Facility	Fort Bragg, NC	2011	30%		90.1-2004
Army	Multi Purpose Training Range	Boardman, OR	2011	30%		90.1-2004
Army	Army National Guard Readiness Center	Coatesville, PA	2011	30%		90.1-2004
Army	Joint Force Headquarters	San Juan, PR	2011	42%		90.1-2004
Army	Gurabo Readiness Center	Gurabo, PR	2011	31%		90.1-2004
Army	Ceiba Refill Station	Ceiba-Rossevelt Roads, PR	2011	31%		90.1-2004
Army	Camp Santiago Readiness Center	Salinas, PR	2011	39%		90.1-2004
Army	Barracks (Regional Training Institute	Camp Williams, Utah	2011	30%		90.1-2004
Army	Regional Training Institute (RTI) Phase II	Camp Williams, Utah	2011	30%		90.1-2004
Army	Gowen Fitness Center	Boise, ID	2011	30%		90.1-2004
Army	MATES Fire Station	Orchard, ID	2011	30%		90.1-2004
Army	AM2455204 Dexter Elementary School Gym	Fort Benning	2011	30%		90.1-2004
Army	Construct a 97,289sf Elementary school to serve 575 students	Fort Buchanan	2011	40%		90.1-2004
Army	BMT Visitors Reception Center, AFCEE	Lackland Air Force Base	2011	30%		90.1-2004

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Army	FY11-Air Force Technical Applications Center	Patrick Air Force Base	2011	22%	Yes	90.1-2004
Army	Physical Fitness Facility	Fort Riley, SC	2012	35%		90.1-2004
Army	Tactical Equipment Maintenance Facility, Ft Sam Houston, JBS	Joint Base San Antonio, TX	2012	40%		90.1-2004
Army	Fire Station/Emergency Dispatch	Fort Polk, LA	2012	40%		90.1-2004
Army	Vehicle Maintenance Facility	Fort Campbell, KY	2012	40%		90.1-2004
Army	Chapel Complex (Large - 600 person) (PN 20697) - Barracks	Fort Sill, OK	2012	43%		90.1-2004
Army	Chapel Complex (Large - 600 person) (PN 20697) - DFAC	Fort Sill, OK	2012	42%		90.1-2004
Army	Whole Barracks Renewal, Ja	Joint Base Lewis-McChord, WA	2012	40%		90.1-2004
Army	DLI-Gen Instruction Bldg (Weckerling Ctr)	Presidio Of Monterey	2012	30%		90.1-2004
Army	PN58207 MCAAP AP3 MainLine RR Tracks	McAlester Army Ammo Plant, OK	2012	40%		90.1-2004
Army	PN58351 MCAAP AP3 pads 21AT-35AT	McAlester Army Ammo Plant	2012	30%		90.1-2004
Army	Aviation Training Facility	Joint Base Langley-Eustis	2012	0%	Yes	90.1-2004
Army	FY12 MCA PN59581 Centralized Wash Facility, SB	Schofield Barracks	2012	43%		90.1-2004
Army	CAP 060344 Air Sppt Ops Squadron	Joint Base Lewis-McChord, WA	2012	40%		90.1-2004

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Army	Ft Drum - Large Chapel Complex (PN 061235)	Fort Drum, NY	2012	30%		90.1-2004
Army	FTR198 Expand Buckner Field House	Fort Richardson, AK	2012	40%		90.1-2004
Army	Deployment Rail Wye - (PN 61846)	Fort Sill, OK	2012	40%		90.1-2004
Army	322069 AIT Barracks (62955) Ph 2 FY12	Fort Jackson, SC	2012	30%		90.1-2004
Army	CAP 064014 23rd Chemical Battalion Complex	Joint Base Lewis-McChord, WA	2012	0%	Yes	90.1-2004
Army	Vehicle Maintenance Facility	Fort Campbell, KY	2012	40%		90.1-2004
Army	TEMF Complex w/Central Vehicle Wash Facility	Fort Leonard Wood	2012	30%		90.1-2004
Army	Brigade Headquarters (MEB)	Fort Polk, LA	2012	0%	Yes	90.1-2004
Army	TEMF Complex (aka-Fires Brigade Complex) Ph 1 - (PN 64753)	Fort Sill, OK	2012	40%		90.1-2004
Army	Battle Command Training Center (BCTC) - (PN 64815)	Fort Sill, OK	2012	40%		90.1-2004
Army	Infantry Platoon Battle Course, Cedar Cree	Fort Knox, KY	2012	40%		90.1-2004
Army	FY12 MCA PN64967 Child Dev Ctr-School Age, FS	Fort Shafter, HI	2012	0%	Yes	90.1-2004
Army	Company Headquarters Building	Fort Bragg, North Carolina	2012	30%		90.1-2004
Army	Engineer Battalion Complex	Fort Knox, KY	2012	0%	Yes	90.1-2004

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Army	CAP 065602, MCA - Ft Carson, FY12, Fort Carson, Co	Fort Carson, CO	2012	30%		90.1-2004
Army	General Instruction Building	Fort Gordon, Georgia	2012	30%		90.1-2004
Army	APG, Auto Technology Evaluation Fac, Ph 3	Aberdeen Proving Ground, Md	2012	40%		90.1-2004
Army	CAP 067022 Modified Record Fire Rnge FY12	Fort Jackson, SC	2012	30%		90.1-2004
Army	Multipurpose Machine Gun Range (MPMG)	Fort Polk, LA	2012	30%		90.1-2004
Army	Greensboro NC Army Reserve Center/Land	Greensboro, NC - P2#333014	2012	40%		90.1-2004
Army	St. Charles/Weldon Springs, MO Army Reserve Center	Weldon Springs, MO	2012	0%	Yes	90.1-2004
Army	Ft. Collins, CO Army Reserve Center	Fort Collins, CO	2012	30%		90.1-2004
Army	Rockford IL, Army Reserve Center/Land	Rockford, IL - P2#333015	2012	40%		90.1-2004
Army	Orangeburg, SC Army Reserve Center/Land	Orangeburg, SC - P2#333016	2012	40%		90.1-2004
Army	Fort Ben Harrison Army Reserve Center	Fort Benjamin Harrison, TX	2012	32%		90.1-2004
Army	St. Joseph MN, Army Reserve Center	St. Joseph, MN - P2#333017	2012	0%	Yes	90.1-2004
Army	Ft. McCoy Container Loading Facility	Fort McCoy, WI	2012	40%		90.1-2004

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Army	Schenectady, NY Army Reserve Center	Schenectady, NY - P2#333019	2012	40%		90.1-2004
Army	Homewood IL Add/Alt Army Reserve Center	Homewood, IL - P2#331461	2012	30%		90.1-2004
Army	Command and Control Facility (20th Support Command HQ)	Aberdeen Proving Ground, Md	2012	NA		90.1-2004
Army	Electronics Maintenance Facility - Tier 2	Fort Bliss, TX	2012	0%	Yes	90.1-2004
Army	Utility Feed for Industrial Complex	Fort Bliss, TX	2012	30%		90.1-2004
Army	GTA Staten Island Army Reserve Center	NAVAL STATION STATEN ISLAND USARC, NY	2012	30%		90.1-2004
Army	Unmanned Aerial Vehicle Maintenance Hangar	Fort Campbell, KY	2012	40%		90.1-2004
Army	Trainee Barracks Cplx - Barracks	Fort Benning, GA	2012	30%		90.1-2004
Army	Trainee Barracks Cplx - TEMF	Fort Benning, GA	2012	40%		90.1-2004
Army	Unmanned Aerial Vehicle Maintenance Hangar	Fort Riley, SC	2012	30%		90.1-2007 ¹
Army	THAAD Battery III	Fort Bliss, TX	2012	40%		90.1-2004
Army	TEMF, ACP, Infrastructure	Fort Bragg, NC	2012	0%	Yes	90.1-2004
Army	National Museum of the United States Army	Fort Belvoir, VA	2012	50%		90.1-2004

¹ The relevant standard for facilities for which design for construction began on or after August 10, 2012 is ASHRAE 90.1-2007

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Army	AEN, 071568, Eastside Electrical Distribution, Ph 2, BAF	Afghanistan	2012	40%		90.1-2004
Army	AEN, 071569, Westside Utilities Infrastructure, BAF	Afghanistan	2012	30%		90.1-2004
Army	AEN, 071570, Westside Electrical Distribution, BAF	Afghanistan	2012	30%		90.1-2004
Army	THAAD Battery (TEMF and COF)	Fort Hood, TX	2012	40%		90.1-2004
Army	FHL, CA Automated Multipurpose Machine Gun (MPMG)	Fort Hunter Liggett	2012	30%		90.1-2004
Army	Scout/Recce Gunnery Range	Fort Campbell, KY	2012	30%		90.1-2004
Army	Hand Grenade Familiarization Range	Fort Gordon, GA	2012	35%		90.1-2004
Army	Ft. McCoy, WI Automated Record Fire Range	Fort McCoy, WI	2012	0%	Yes	90.1-2004
Army	FTR271 Brigade Complex, Ph 2	Joint Base Elmendorf-Richardson, AK	2012	40%		90.1-2004
Army	Barracks Complex (EAB)	Fort Campbell, KY	2012	0%	Yes	90.1-2004
Army	Barracks Complex (5SFG/160th SOAR)	Fort Campbell, KY	2012	40%		90.1-2004
Army	Ft. McCoy NCOA Phase III - Billeting	Fort McCoy	2012	30%		90.1-2004
Army	Aviation Complex, Ph 1B	Joint Base Lewis-McChord, WA	2012	0%	Yes	90.1-2007
Army	Battle Command Training Center	Fort Bragg, NC	2012	50%		90.1-2004
Army	THAAD Battery (TEMF, COF, and	Fort Hood, TX	2012	40%		90.1-2004

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	ACP)					
Army	CAP 077302, MCA - Ft Carson, FY12	Fort Carson, CO	2012	0%	Yes	90.1-2004
Army	Aircraft Maintenance Hangar	Fort Carson, CO	2012	40%		90.1-2004
Army	Aircraft Loading Area	Fort Carson, CO	2012	40%		90.1-2004
Army	Coraopolis, PA Heated Storage Building	Coraopolis Armory, PA	2012	40%		90.1-2004
Army	Military Clothing Sales Store	Fort Gordon, GA	2012	40%		90.1-2004
Army	Sensitive Compartmented Information Facility	Fort Hood, TX	2012	30%		90.1-2004
Army	Aviation Readiness Center	Bangor, Maine	2012	30%	Yes	90.1-2004
Army	Brunswick AFRC	Brunswick, Maine	2012	30%	Yes	90.1-2004
Army	Readiness Center	Stillwater, MN	2012	40%		90.1-2004
Army	Readiness Center (RC13)	Arden Hills, MN	2012	40%		90.1-2004
Army	RTI	Fort Leanord, MO	2012	16%	Yes	90.1-2004
Army	FMS	Macon, MO	2012	30%		90.1-2004
Army	Readiness Center addition	Kansas City, MO	2012	30%		90.1-2004
Army	Readiness Center addition	Monett, MO	2012	30%		90.1-2004
Army	Readiness Center addition	Perryville, MO	2012	30%		90.1-2004
Army	Readiness Center, Add/Alt	Lewisburg, PA	2012	30%		90.1-2004
Army	MATES	Salinas, PR	2012	30%		90.1-2007
Army	Fort Worth AFRC	Fort Worth, TX	2012	30%		90.1-2004
Army	Info Ops Readiness Center	JBLM - Tacoma, WA	2012	30%		90.1-2004
Army	Barracks	Yakima Training	2012	30%		90.1-2004

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		Center, WA				
Army	Range Support Building & Tower	Camp McCain, MS	2012	37%		90.1-2004
Army	Maint & Repair BAM Bldg 0S223	Camp McCain, MS	2012	11%	Yes	90.1-2004
Army	SRM Southgate RC	Camp Shelby, MS	2012	34%		90.1-2004
Army	Repairs FMS #4	Gulfport, MS	2012	0%	Yes	90.1-2004
Army	TUAS Simulation Support Facility	Camp Shelby, MS	2012	38%		90.1-2004
Army	Add/Alt Bldg S-212 Physical Exam Facility	Camp McCain, MS	2012	39%		90.1-2004
Army	Parachute Drying Tower, North West Street RC	Jackson, MS	2012	0%	Yes	90.1-2004
Navy	Building Number 7305	GREAT LAKES, IL	2008	20%	Tbd	90.1-2004
Navy	Navy Drug Screening Laboratory	GREAT LAKES, IL	2012	TBD	ASHRAE 90.1 2007	90.1-2004
Navy	Submarine learning Ctr Training HQ	GROTON, CT	2008	30%		90.1-2004
Navy	Corry 'A' School BEQ	PENSACOLA, FL	2008	30%		90.1-2004
Navy	Simulator Addition for UMFO Program	PENSACOLA, FL	2008	30%		90.1-2004
Navy	Repair HVAC Officers Quarters BLDG 3251	PENSACOLA, FL	2012	30%		90.1-2004
Navy	552	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	553	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	554	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	555	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	556	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004

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Navy	557	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	558	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	559	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	560	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	561	NEW ORLEANS, LA	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	512	NEW ORLEANS, LA	2008	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	502	NEW ORLEANS, LA	2009	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	562	NEW ORLEANS, LA	2010	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	572	NEW ORLEANS, LA	2010	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	P-8A (MMA) Facilities Modification	JACKSONVILLE, FL	2008	30%		90.1-2004
Navy	Child Development Center	JACKSONVILLE, FL	2009	40%		90.1-2004
Navy	P-8A Integrated Training Center	JACKSONVILLE, FL	2009	40%		90.1-2004
Navy	BAMS Trainer	JACKSONVILLE, FL	2011	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	P-8A Maintenance Training Facility	JACKSONVILLE, FL	2011	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	BAMS Mission Control Center	JACKSONVILLE, FL	2012	TBD	ASHRAE 90.1 2007 50%	90.1-2004
Navy	C-4241 PWD Crane Storage	KEY WEST, FL	2008	TBD	Tbd	90.1-2004
Navy	Operational Facilities for T-6	CORPUS CHRISTI, TX	2007	30%		90.1-2004
Navy	Reserve Training Center	CORPUS CHRISTI, TX	2009	30%		90.1-2004
Navy	Bachelor Enlisted Quarters, Homeport Ashore	SAN DIEGO, CA	2009	30%		90.1-2004
Navy	Child Development Center	SAN DIEGO, CA		30%		90.1-2004
Navy	NEX Mini Mart	SAN DIEGO, CA		30%		90.1-2004

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Navy	Rotary Hangar	SAN DIEGO, CA	2009	30%		90.1-2004
Navy	Regatta Child Development Center	OAK Harbor, WA	2009	TBD	Tbd	90.1-2004
Navy	Academic Fire Instruction Building	OAK Harbor, WA	2009	TBD	Tbd	90.1-2004
Navy	780	Millington, TN	2009	30%		90.1-2004
Navy	943	Millington, TN	2009	30%		90.1-2004
Navy	Advanced Radar Detection Laboratory (ARDEL) Facility	Kekaha, HI	2009	30%		90.1-2004
Navy	68 Police Station	Sugar Grove, WV	2010	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	38 Emergency services	Sugar Grove, WV	2010	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	303 warehouse	Sugar Grove, WV	2012	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	40 BEQ	Sugar Grove, WV	2012	TBD	Tbd	90.1-2004
Navy	Officer Training Command (OTC) Quarters	Newport, RI	2008	30%		90.1-2004
Navy	Electromagnetic Sensor Facility	Newport, RI	2009	30%		90.1-2004
Navy	AWS facility	Newport, RI	2009	TBD	Tbd	90.1-2004
Navy	Senior Enlisted Qtrs	Newport, RI	2009	TBD	Tbd	90.1-2004
Navy	NOSC Pittsburgh	Mechanicsburg, PA	2009	30%		90.1-2004
Navy	Controlled Industrial Facility	Portsmouth, VA	2008	30%		90.1-2004
Navy	Controlled Industrial Facility	Portsmouth, NH	2008	30%		90.1-2004
Navy	Officer Training Command (OTC) Quarters	Portsmouth, NH	2008	30%		90.1-2004
Navy	B9A/B19	Bethesda, MD	2008	30%		90.1-2004
Navy	B17/B62/B63	Bethesda, MD	2009	30%		90.1-2004

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Navy	B32	Bethesda, MD	2010	30%		90.1-2004
Navy	B102/B103	Bethesda, MD	2010	30%		90.1-2004
Navy	B5/107	Bethesda, MD	2010	30%		90.1-2004
Navy	B3/B104	Bethesda, MD	2010	30%		90.1-2004
Navy	B82	Bethesda, MD	2010	30%		90.1-2004
Navy	Fire Station	Djibouti	2008	30%		90.1-2004
Navy	General Warehouse	Djibouti	2009	30%		90.1-2004
Navy	Horn of Africa Joint Operations Center	Djibouti	2009	30%		90.1-2004
Navy	Camp Lemonier HQ Facility	Djibouti	2009	30%		90.1-2004
Navy	Containerized Living and Working Units	Djibouti	2012	30%		90.1-2004
Navy	Galley Addition and Warehouse	Djibouti	2012	30%		90.1-2004
Navy	Fitness Center	Djibouti	2012	30%		90.1-2004
Navy	Task Force Compound	Djibouti	2013	30%		90.1-2004
Navy	CW Barracks- NW1250	FPO, Guam	2007	30%		90.1-2004
Navy	Mil Dog Facility- NW1235	FPO, Guam	2007	30%		90.1-2004
Navy	Global Hawk Hanger - 18110	FPO, Guam	2007	30%		90.1-2004
Navy	Northwest Field Technical Training Facility	FPO, Guam	2008	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Commando Warrior Barracks	FPO, Guam	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Commando Warrior Operations Facility	FPO, Guam	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004

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Navy	Postal Service Center	FPO, Guam	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Combat Support Vehicle Maintenance Facility	FPO, Guam	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Red Horse HQ Engineering Facility	FPO, Guam	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Combat Comm Operations Facility	FPO, Guam	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Combat Comm Transmission Facility	FPO, Guam	2011	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Strike Fuel Systems Maint. Hangar	FPO, Guam	2011	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Conventional Munition Maintenance Facility	FPO, Guam	2011	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Air Freight Terminal	FPO, Guam	2011	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Red Horse Cantonment Operations Facility	FPO, Guam	2011	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Base Gym- 25045	FPO, Guam		30%		90.1-2004
Navy	5163/WF SECURITY FORCE #2	Kings Bay, GA	2007	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	2054/ARMORY	Kings Bay, GA	2007	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	5162/ARFF	Kings Bay, GA	2007	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	2055/AFVOSF	Kings Bay, GA	2007	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	2038/ARMORED FIGHTING VEH SUP FAC	Kings Bay, GA	2007	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	6938/VICS (FG)	Kings Bay, GA	2007	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	4016/WTP BUILDING	Kings Bay, GA	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	4043/SHOP 31 STOR. (4027)	Kings Bay, GA	2010	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	5155/FREEZE SEAL STOR (5916)	Kings Bay, GA	2010	TBD	ASHRAE 90.1 2007 0%	90.1-2004

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Navy	4044/PERISCOPE STOR BLDG	Kings Bay, GA	2010	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	Broad Area Maritime Surveillance T & E Fac	PATUXENT RIVER, MD	2009	25%	Tbd	90.1-2004
Navy	Bldg 00006	China Lake, CA	2007	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	Bldg 13475	China Lake, CA	2008	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	Bldg 00012	China Lake, CA	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Bldg 00010 - Mclean Lab	China Lake, CA	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Control Bldg	China Lake, CA	2011	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	Officer Training Command (OTC) Quarters	Virginia Beach, VA	2008	30%		90.1-2004
Navy	SOF Special Boat Team 20 Operational Facility	Virginia Beach, VA	2008	30%		90.1-2004
Navy	SOF Seal Team OPS and Support Fac	Virginia Beach, VA	2008	30%		90.1-2004
Navy	EODOSU/1- Ordancxe Ops Facility	Virginia Beach, VA	2009	30%		90.1-2004
Navy	Naval Construction Div Operations Facility	Virginia Beach, VA	2009	30%		90.1-2004
Navy	Officer Training Command (OTC) Quarters	Norfolk, VA	2008	30%		90.1-2004
Navy	BRAC Joint Regional Correctional Facility	Norfolk, VA	2009	30%		90.1-2004
Navy	Naval Construction Div Operations Facility	Norfolk, VA	2009	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Navy	Bldg 3400 - Child Development Center	EL CENTRO, CA	2008	30%		90.1-2004
Navy	Reserve Center	EL CENTRO, CA	2009	30%		90.1-2004
Navy	OC-450	Virginia Beach, VA	2007	30%		90.1-2004
Navy	C-40 Hangar	Virginia Beach, VA	2008	30%		90.1-2004
Navy	DN 330	Virginia Beach, VA	2009	30%		90.1-2004
Navy	DN 250	Virginia Beach, VA	2009	30%		90.1-2004
Navy	B-2215 AIRFIELD CONTROL TOWER/RATCF	Mayport, FL	2007	0%	Tbd	90.1-2004
Navy	B-2234 SINGLE SAILOR BQ	Mayport, FL	2007	0%	Tbd	90.1-2004
Navy	B-2276 TELEPHONE EXCHANGE	Mayport, FL	2007	0%	Tbd	90.1-2004
Navy	B-2280 MAIN GATE SENTRY HOUSE	Mayport, FL	2007	0%	Tbd	90.1-2004
Navy	B-2277 COMUSNAVSOUTH ADMIN	Mayport, FL	2008	0%	Tbd	90.1-2004
Navy	B-2302GATE 5A GUARD SHACK	Mayport, FL	2008	0%	Tbd	90.1-2004
Navy	B-2284 MAGAZINE OFFICE	Mayport, FL	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	B-2285 OSPREY COVE LAUNDRY REC ROOM	Mayport, FL	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	B-2286 PELICAN ROOST LAUNDRY	Mayport, FL	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	B-2287 CHILD DEVELOPMENT CENTER	Mayport, FL	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	B-2307 ALPHA WHARF UTILITY BUILDING	Mayport, FL	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	B-2288 AVIATION FUEL OPS/LAB	Mayport, FL	2010	TBD	ASHRAE 90.1 2007 0%	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
	FAC					
Navy	B-2294 E/F WHARF STEAM PLANT BLDG	Mayport, FL	2010	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	5736 AFRC	Kingsville, TX	2009	TBD	Tbd	90.1-2004
Navy	3755 NGIS	Kingsville, TX	2009	TBD	Tbd	90.1-2004
Navy	MSAT Simulator	Fallon, NV	2007	0%	Tbd	90.1-2004
Navy	Warrior Physical Fitness Center	Fallon, NV	2010	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	NF Tower	Milton, FL	2007	30%		90.1-2004
Navy	SF Tower	Milton, FL	2007	30%		90.1-2004
Navy	BEQ	Milton, FL	2007	30%		90.1-2004
Navy	T-6B JPATS Training Ops Paraloft Facility	Milton, FL	2008	30%		90.1-2004
Navy	F-35 POL Operations Facility	Milton, FL	2008	30%		90.1-2004
Navy	Applied Instruction Facility, EOD Course	Milton, FL	2008	30%		90.1-2004
Navy	BEQ, EOD School Phase 2	Milton, FL	2009	30%		90.1-2004
Navy	H106 DBB FAMILY HOUSING	Guantanamo Bay, Cuba	2010	40%		90.1-2004
Navy	Navy Housing and Fitness center	Guantanamo Bay, Cuba	2010	40%		90.1-2004
Navy	Pass & ID	Orlando, FL	2012	TBD	ASHRAE 90.1 2007 40%	90.1-2004
Navy	Advanced Minehunting	Panama City Beach, FL	2007	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	Expeditionary Missions	Panama City Beach, FL	2007	0%	Tbd	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Navy	P-315 (building 598)	Panama City Beach, FL	2007	0%	Tbd	90.1-2004
Navy	Mine and Shallow Water	Panama City Beach, FL	2008	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	Air Force Dive Locker	Panama City Beach, FL	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	P-388 (building 608)	Panama City Beach, FL	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	Solar Roof Panels	Panama City Beach, FL	2010	TBD	Tbd	90.1-2004
Navy	MWR Youth Center	Panama City Beach, FL	2010	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	Expansion of B-382	Panama City Beach, FL	2011	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	3422	Crane, IN	2006	20%	Tbd	90.1-2004
Navy	3461	Crane, IN	2007	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	3479 (Mags)	Crane, IN	2007	TBD	Tbd	90.1-2004
Navy	3431 (Test Stand Structure)	Crane, IN	2007	TBD	Tbd	90.1-2004
Navy	3397 (Air Comp Bldg)	Crane, IN	2008	TBD	Tbd	90.1-2004
Navy	3396 (Air Comp Bldg)	Crane, IN	2008	TBD	Tbd	90.1-2004
Navy	3441 (Storage)	Crane, IN	2008	TBD	Tbd	90.1-2004
Navy	Aviation Simulator Training Facility	Atsugi, Japan	2009	30%		90.1-2004
Navy		Sasebo, Japan		TBD	Tbd	90.1-2004
Navy	9	Seal Beach, CA	2010	30%		90.1-2004
Navy	391	Washington, DC		TBD	Tbd	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Navy	Agile Chemical Facility, Phase 2	Dahlgren, VA	2010	30%		90.1-2004
Navy	Tech Lab	Dahlgren, VA		TBD		90.1-2004
Navy	Child Development Center	Annapolis, MD	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	Military Working Dog Relocation, Apra Harbor	Santa Rita, Guam	2008	30%		90.1-2004
Navy	Consolidated SLC Training & CSS-15 HQ Fac.	Santa Rita, Guam	2008	30%		90.1-2004
Navy	Bachelor Enlisted Quarters, Main base	Santa Rita, Guam	2008	30%		90.1-2004
Navy	Torpedo Exercise Support Building	Santa Rita, Guam	2008	30%		90.1-2004
Navy	Combined Support Maint. Shop, GUANG Barr.	Santa Rita, Guam	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Replacement, 30 Units at North Tipalao, Ph III	Santa Rita, Guam	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	NEX Mini-Mart and Gas Station	Santa Rita, Guam	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Finegayan Site Prep and Utilites	Santa Rita, Guam	2009	TBD	Tbd	90.1-2004
Navy	33	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	194	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	273	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	275	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	276	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	401	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	435	Gulfport, MS	2007	TBD	Tbd	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Navy	438	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	439	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	440	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	442	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	443	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	444	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	449	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	450	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	452	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	453	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	456	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	459	Gulfport, MS	2007	TBD	Tbd	90.1-2004
Navy	447B	Gulfport, MS	2009	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	463	Gulfport, MS	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	465	Gulfport, MS	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	E-2D Training Facility	Norfolk, VA	2008	30%		90.1-2004
Navy	JBPHH CHILD DEVELOPMENT CENTER (Center Dr)	Pearl Harbor, HI	2007	TBD	ASHRAE 90.1 2007 40%	90.1-2004
Navy	Bldg 130, NOAA	Pearl Harbor, HI	2008	30%		90.1-2004
Navy	APCSS Conference & Technology Learning Center	Pearl Harbor, HI	2008	30%		90.1-2004
Navy	Joint POW/MIA Accounting Command (Hickam AFB)	Pearl Harbor, HI	2008	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Navy	754, Missile Magazine	Pearl Harbor, HI	2008	TBD	Tbd	90.1-2004
Navy	753, Missile Magazine	Pearl Harbor, HI	2008	TBD	Tbd	90.1-2004
Navy	752, Missile Magazine	Pearl Harbor, HI	2008	TBD	Tbd	90.1-2004
Navy	751, Missile Magazine	Pearl Harbor, HI	2008	TBD	Tbd	90.1-2004
Navy	750, Missile Magazine	Pearl Harbor, HI	2008	TBD	Tbd	90.1-2004
Navy	JBPHH Fitness Center	Pearl Harbor, HI	2008	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Child Development Center (Ford Island), JBPHH	Pearl Harbor, HI	2009	30%		90.1-2004
Navy	Center for Disaster Management/Humanitarian Assistance	Pearl Harbor, HI	2010	30%		90.1-2004
Navy	Production Services Support Facility	Pearl Harbor, HI	2010	30%		90.1-2004
Navy	1101H, CHILLER PLANT BLDG FOR 1102H	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1128, Beach Cottage	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1129, Beach Cottage	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1130, Beach Cottage	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1131, Beach Cottage	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1132, Beach Cottage	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1133, Beach Cottage	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1272, Main Gate Guard Shelter	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1599H, CHILD DEVELOPMENT CENTER	Pearl Harbor, HI		TBD	Tbd	90.1-2004

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Navy	1658H, CHILD DEVELOPMENT CENTER	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	1851H, FIRST TERM AIRMEN'S CENTER	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	2123H, HAZMAT STORAGE	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	2127H, WTR FR PMP STN	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	2130H, HG MAINT - HGR 21	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	2131H, SPACE FOR SPECIALIZED MAINT	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	2135H, FUEL CELL NOSE DOCK - HGR 19	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	2152H, PUMP STATION BLDG	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	3430H, F-15 WATER RINSE STORAGE	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	3596H, SP ENTRY CON BLDG	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	4046H, PUMP STN BLDG-POTABLE	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	4100H, RESERVE FORCES GENERAL TRAIN	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	557H, Decontamination Equip STRG	Pearl Harbor, HI		TBD	Tbd	90.1-2004
Navy	Air Reception Facilities	Rota, SP	2010	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	Air Traffic Control Tower	Rota, SP	2011	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	Global Hawk (B510)	Sigonella, IT	2009	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	Operations and Support Facilities	Manama, bahrain	2009	30%		90.1-2004
Navy	NAVCENT Ammunition Magazines	Manama, bahrain	2011	30%		90.1-2004

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Navy	BEQ	Manama, bahrain	2012	30%		90.1-2004
Navy	EOD Operation Building	Manama, bahrain	2012	30%		90.1-2004
Navy	Recreation Center	Manama, bahrain	2012	30%		90.1-2004
Navy	Bldg 730 - Admin/Training Building Renovation	Lemoore, CA	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Bldg 783 - Marine Corps Reserve Training Center	Lemoore, CA	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Bldg 965A - Child Development Center	Lemoore, CA	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	Bldg 895 - Barracks 14/15 Renovation	Lemoore, CA	2010	TBD	ASHRAE 90.1 2007 25%	90.1-2004
Navy	BLDG 197; Jet Engine Test Cell	Meridian, MS		TBD		90.1-2004
Navy	BLDG 115; Joe Williams Field Fire Station	Meridian, MS		TBD		90.1-2004
Navy	BLDG 369; Fitness Center	Meridian, MS		TBD		90.1-2004
Navy	BLDG 256; Child Development Center	Meridian, MS		TBD	ASHRAE 90.1 2007	90.1-2004
Navy	BLDG 256; Child Development Center	Meridian, MS		TBD	ASHRAE 90.1 2007	90.1-2004
Navy	Public Works Shops Consolidation	San Diego, CA	2007	30%		90.1-2004
Navy	Bldg. 652 - OP Trainer Bldg.	San Diego, CA	2008	30%		90.1-2004
Navy	Construct EOD Facility	San Diego, CA	2011	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy		Changi, Singapore		TBD	Tbd	90.1-2004

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Navy	Limited Area Productions/Storage Complex Inc 7 OF 7	Bremerton, WA	2004	TBD	ASHRAE 90.1 2001	90.1-2004
Navy	Missile Assembly Building 6600 (MAB3)	Bremerton, WA	2007	30%		90.1-2004
Navy	Bremerton CDC Building 1141	Bremerton, WA	2008	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	Bremerton BEQ Building 1131	Bremerton, WA	2008	30%		90.1-2004
Navy	EHW Security Force Facility	Bremerton, WA	2009	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	CSDS-5 Laboratory Expansion Phase I	Bremerton, WA	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	W-200 - Building/Admin Facility Modernization	Washington Navy Yard, DC	2007	10%	Tbd	90.1-2004
Navy	Carderock 42	Washington Navy Yard, DC	2010	TBD	ASHRAE 90.1 2007 20%	90.1-2004
Navy	W-111 - Renovation & Modernization	Washington Navy Yard, DC	2011	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	W-02 - VFQ Renovation	Washington Navy Yard, DC	2011	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	Carderock 129	Washington Navy Yard, DC	2011	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	NRL-54	Washington Navy Yard, DC	2011	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	NRL-A69 Material Science & Technology Division Laboratory	Washington Navy Yard, DC	2011	TBD	ASHRAE 90.1 2007 10%	90.1-2004
Navy	Expansion to building 1	Washington Navy Yard, DC	2011	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	WNY 196 SPAWAR	Washington Navy	2011	TBD	ASHRAE 90.1 2010 0%	90.1-2004

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		Yard, DC				
Navy	NRL-271 ASRL	Washington Navy Yard, DC	2012	0%	Tbd	90.1-2004
Navy	WNY 219 NAVSEA	Washington Navy Yard, DC	2012	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Navy	NRL 97 Southside	Washington Navy Yard, DC	2012	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	WNY 108 3rd Flr Archive	Washington Navy Yard, DC	2012	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	W-126 Energy Demonstration Project	Washington Navy Yard, DC		TBD	ASHRAE 90.1 2010 40%	90.1-2004
Navy	W-183 BRAC V - Building Renovation	Washington Navy Yard, DC		TBD	Tbd	90.1-2004
Navy	SSGN BARRACKS	Diego Garcia, Naval Fac, DG	2008	TBD	ASHRAE 90.1 2007 50%	90.1-2004
Navy	Dehumidified warehouse	Diego Garcia, Naval Fac, DG	2010	TBD	ASHRAE 90.1 2010 50%	90.1-2004
Navy	Nano water treatment plant	Diego Garcia, Naval Fac, DG	2010	TBD	ASHRAE 90.1 2010 50%	90.1-2004
Navy	Child Development Center	Yorktown, VA	2007	30%		90.1-2004
Navy	Main Gate	Colts Neck, NJ	2009	TBD	ASHRAE 90.1 2010 0%	90.1-2004
Navy	1100	POINT Mugu, CA	2009	TBD	ASHRAE 90.1 2010 40%	90.1-2004
Navy	100	Point Mugu, CA	2010	TBD	ASHRAE 90.1 2010 40%	90.1-2004
Navy	Joint Training Tank	Fort Worth, TX	2008	0%	Tbd	90.1-2004
Navy	Air Traffic Control Twr	Fort Worth, TX	2008	0%	Tbd	90.1-2004
Navy	Child Development Ctr	Fort Worth, TX	2008	0%	Tbd	90.1-2004
Navy	8th MCD Admin Bldg	Fort Worth, TX	2008	0%	Tbd	90.1-2004

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Navy	Hangar 1048 Addition	Fort Worth, TX	2009	TBD	Tbd	90.1-2004
Navy	Joint Communications Bldg	Fort Worth, TX	2010	TBD	ASHRAE 90.1 2007 30%	90.1-2004
Navy	HAZMAT Storage Facility (1267)	Fort Worth, TX	2012	TBD	ASHRAE 90.1 2007 0%	90.1-2004
Air Force	Air Support Operations Squadron Complex	Langley, Hampton, VA	2008	31%		90.1-2004
Air Force	AIR SUPPORT OPERATIONS SQUADRON COMPLEX	Fort Riley Junction City, KS	2007	33%		90.1-2004
Air Force	Joint Air Ground Center	Fort Hood Killeen, TX	2009	30%		90.1-2004
Air Force	AIR SUPPORT OPERATIONS CENTER	Ft Campbell Hopkinsville, KY	2012	38%		90.1-2007
Air Force	AIR SUPPORT OPERATIONS CENTER	Fort Bliss El Paso, Tx	2012	30%		90.1-2007
Air Force	F-35 Squad Ops/AMU 2	Luke AFB Phoenix, AZ	2011	30%		90.1-2004
Air Force	NSSTTC	Camp Guernsey Guernsey, WY	2010	32%		90.1-2004
Air Force	CONSOL DIGITAL AIRPORT SURVEILL RADAR/RAPCON FAC	Altus AFB Altus City, OK	2009	36%		90.1-2004
Air Force	FIRE RESCUE CENTER	Altus AFB Altus City, OK	2012	30%		90.1-2007
Air Force	C-17 Sheet Metal/Composite Shop	ALTUS AFB Altus City, OK	2007	30%		90.1-2004
Air Force	DRBS Storage Facility	AGANA, GU	2010	30%		90.1-2004
Air Force	Guam Strike Conventional Munitions Maintenance Facility	ANDERSEN AFB Agana, Guam	2011	20%	Yes	90.1-2004

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Air Force	LOW OBSERVABLE, CORROSION CONTROL, COMPOSITE REPAIR SHOP	ANDERSEN AFB Agana, Guam	2012	30%		90.1-2007
Air Force	TACTICAL MISSILE MAINTENANCE FACILITY	ANDERSEN AFB Agana, Guam	2011	30%		90.1-2004
Air Force	Replace Munitions Complex	ANDREWS, Camp Spring, MD	2008	31%		90.1-2004
Air Force	BRAC - HQ & Readiness Center	ANDREWS, Camp Spring, MD	2006	30%		90.1-2004
Air Force	STRATEGIC PLANNING AND DEVELOPMENT FACILITY	ANDREWS AFB Camp Spring, MD	2007	30%		90.1-2004
Air Force	CONSTRUCT NEW MUNITIONS STORAGE AREA (MSA) (TFI)	ANDREWS AFB Camp Spring, MD	2009	30%		90.1-2004
Air Force	Ambulatory Care Center	ANDREWS AFB Camp Spring, MD	2010	31%		90.1-2004
Air Force	Dental Clinic	ANDREWS AFB Camp Spring, MD	2009	35%		90.1-2004
Air Force	NCR Relocation - Administration Facility	ANDREWS AFB Camp Spring, MD	2007	47%		90.1-2004
Air Force	BRAC - Administration Facility	ANDREWS AFB Camp Spring, MD	2007	47%		90.1-2004
Air Force	Ops and Training Facility	ATLANTIC City, NJ	2004	77%		90.1-2004
Air Force	Munitions Admin Fac	ATLANTIC City, NJ	2006	47%		90.1-2004
Air Force	TFI-ASOS Beddown	ATLANTIC City, NJ	2008	30%		90.1-2004
Air Force	Air Support Operations Squadron	AVIANO AB Pordenone, Italy	2010	18%	Yes	90.1-2004

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Air Force	F-16 Mission Training Center	AVIANO AB Pordenone, Italy	2011	20%	Yes	90.1-2004
Air Force	Dormitory 144PN	AVIANO AB Pordenone, Italy	2010	18%	Yes	90.1-2004
Air Force	Acft Shelters/fuel stands	Fort WAYNE, IN	2008	30%		90.1-2004
Air Force	A-10 Facility Conversion - Munitions Complex	Fort WAYNE, IN	2011	30%		90.1-2004
Air Force	Weapons Load Crew Training Facility	BARKSDALE AFB Bossier City, LA	2010	30%		90.1-2004
Air Force	Mission Support Group Complex	BARKSDALE AFB Bossier City, LA	2011	21%	Yes	90.1-2004
Air Force	SECURITY FORCES COMPLEX	BARKSDALE AFB Bossier City, LA	2009	28%	Yes	90.1-2004
Air Force	BRAC - EOD Facility	BARNES, MA	2006	32%		90.1-2004
Air Force	Wing Operations and Training Facility	BEAL, CA	2011	41%		90.1-2004
Air Force	Child Development Center	BEALE AFB Marysville, CA	2009	17%	Yes	90.1-2004
Air Force	KC-135 Alert Crew Quarters	BIRMINGHAM, AL	2009	30%		90.1-2004
Air Force	Mobility Processing Center	BIRMINGHAM, AL	2006	42%		90.1-2004
Air Force	Joint Air Defense Operations Center	BOLLING AFB Washington, DC	2009	30%		90.1-2004
Air Force	BRAC - TRI-Service Research Facility	Fort SAM HOUSTON San Antonio, TX	2008	20%	Yes	90.1-2004
Air Force	Alert Crew Headquarters	AURORA, CO	2004	38%		90.1-2004

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Air Force	BRAC CONSTRUCT MISSISSIPPI GATE ADDITIONAL LANE	BUCKLEY AFB Denver, CO	2008	30%		90.1-2004
Air Force	SECURITY FORCES OPERATIONS FACILITY	BUCKLEY AFB Denver, CO	2010	24%	Yes	90.1-2004
Air Force	CONTROL TOWER	Grissom, IN	2009	30%		90.1-2004
Air Force	Security Frces/Comm Fac	BURLINGTON, VT	2007	52%		90.1-2004
Air Force	BRAC - BULLIS Medical Field Training Complex	CAMP BULLIS San Antonio, TX	2008	30%		90.1-2004
Air Force	AIRMEN & FAMILY READINESS CENTER	CANNON AFB Clovis, NM	2012	30%		90.1-2007
Air Force	SOF C-130 MX HANGAR	CANNON AFB Clovis, NM	2008	30%		90.1-2004
Air Force	CONSOLIDATED COMMUNICATIONS FACILITY	CANNON AFB Clovis, NM	2007	30%		90.1-2004
Air Force	SOF C-130 FC & CC HANGARS (FCCC)	CANNON AFB Clovis, NM	2010	40%		90.1-2004
Air Force	SOF C130 HANGAR/AMU (2BAY)	CANNON AFB Clovis, NM	2010	38%		90.1-2004
Air Force	UAS SQUAD OPS FACILITY (33 SOS) SOF OPS AND TRAINING FACILITIES (3RD)	CANNON AFB Clovis, NM	2008	32%		90.1-2004
Air Force	Dormitory (96 Rm)	CANNON AFB Clovis, NM	2010	30%		90.1-2004
Air Force	SOF C-130 Squadron Operations Facility	CANNON AFB Clovis, NM	2011	31%		90.1-2004

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Air Force	SOF AC-130 SQUADRON OPERATIONS FACILITY	CANNON AFB Clovis, NM	2011	31%		90.1-2004
Air Force	SOF C-130 WASH RACK HANGAR	CANNON AFB Clovis, NM	2011	33%		90.1-2004
Air Force	SOF AMXS FACILITY	CANNON AFB Clovis, NM	2011	31%		90.1-2004
Air Force	SOF HANGAR/AIRCRAFT MAINTENANCE UNIT	CANNON AFB Clovis, NM	2011	37%		90.1-2004
Air Force	SOF AC-RECAP SIMULATOR FACILITY	CANNON AFB Clovis, NM	2011	31%		90.1-2004
Air Force	SOF AC-RECAP SQUADRON OPERATIONS FACILITY	CANNON AFB Clovis, NM	2011	33%		90.1-2004
Air Force	UAS SQUADRON OPS FACILITY	CANNON AFB Clovis, NM	2010	30%		90.1-2004
Air Force	SCHOOL AGE PROGRAM	CANNON AFB Clovis, NM	2012	30%		90.1-2007
Air Force	Child Development Center	CANNON AFB Clovis, NM	2009	20%	Yes	90.1-2004
Air Force	96-PERSON DORMITORY (NM)	CANNON AFB Clovis, NM	2011	34%		90.1-2004
Air Force	CCAFS - Range Communications Facility	CAPE CANAVERAL AS Cape Canaveral, FL	2011	15%	Yes	90.1-2004
Air Force	SATELLITE OPERATIONS SUPPORT FACILITY	CAPE CANAVERAL AS Cape Canaveral, FL	2009	31%		90.1-2004
Air Force	Security Forces Facility	Fort Worth, TX	2004	37%		90.1-2004
Air Force	Security Forces Training Facility	CARSWELL, TX	2008	37%		90.1-2004

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Air Force	CIVIL ENGINEER COMPLEX (TFI) - PHASE 1	CHARLESTON AFB Charleston, SC	2011	28%	Yes	90.1-2004
Air Force	Child Development Center	CHARLESTON AFB Charleston, SC	2008	38%		90.1-2004
Air Force	FIRE/RESCUE STATION	CHARLESTON AFB Charleston, SC	2011	30%		90.1-2004
Air Force	TFI - C 130 Squad Ops	CHEYENNE, WY	2004	68%		90.1-2004
Air Force	C 130 Flight Simulator Trng	CHEYENNE, WY	2011	30%		90.1-2004
Air Force	AIRCRAFT FUEL SYSTEMS MAINTENANCE DOCK	COLUMBUS AFB Columbus, MS	2010	20%	Yes	90.1-2004
Air Force	Child Development Center	COLUMBUS AFB Columbus, MS	2007	22%	Yes	90.1-2004
Air Force	Fuel Cell and Corrosion Control Hangar	MONTGOMERY, AL	2006	46%		90.1-2004
Air Force	CSAR EC-130 Maintenance Hangar/AMU	DAVIS-MONTHAN, Tucson, AZ	2007	22%	Yes	90.1-2004
Air Force	AMARG HANGAR	DAVIS-MONTHAN AFB Tucson, AZ	2010	26%	Yes	90.1-2004
Air Force	TFI-Predator Beddown- FOC	DAVIS, AZ	2006	31%		90.1-2004
Air Force	Dormitory (144 RM)	DAVIS-MONTHAN AFB Tucson, AZ	2009	27%	Yes	90.1-2004
Air Force	BRAC - Construct TSSC Storage Facility (3546)	DAVIS-MONTHAN, Tucson, AZ	2008	30%		90.1-2004
Air Force	TFI- Predator FOC	DAVIS-MONTHAN, Tucson, AZ	2008	36%		90.1-2004

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Air Force	HC-130J Simulator Facility	DAVIS-MONTHAN AFB Tucson, AZ	2009	30%		90.1-2004
Air Force	HC-130J Squadron Operations Facility	DAVIS-MONTHAN AFB Tucson, AZ	2009	30%		90.1-2004
Air Force	HC-130J Parts Store	DAVIS-MONTHAN AFB Tucson, AZ	2010	35%		90.1-2004
Air Force	EC-130H Simulator/Training Operations	DAVIS-MONTHAN AFB Tucson, AZ	2011	30%		90.1-2004
Air Force	HC-130J Aerial Delivery Facility	DAVIS-MONTHAN AFB Tucson, AZ	2010	35%		90.1-2004
Air Force	HC-130J AGE Maintenance Facility	DAVIS-MONTHAN AFB Tucson, AZ	2010	32%		90.1-2004
Air Force	HC-130J Joint Use Fuel Cell	DAVIS-MONTHAN AFB Tucson, AZ	2011	30%		90.1-2004
Air Force	FIRE/CRASH RESCUE STATION	DAVIS-MONTHAN AFB Tucson, AZ	2009	29%	Yes	90.1-2004
Air Force	Construct New Control Tower	DOBBINS, Atlanta, GA	2009	30%		90.1-2004
Air Force	Construct New GCA Center	DOBBINS, Atlanta, GA	2007	20%	Yes	90.1-2004
Air Force	Replace Fire Crash Rescue Station	CHARLOTTE, NC	2008	48%		90.1-2004
Air Force	PRIME BEEF "S Teams" Beddown	CHARLOTTE, NC	2008	36%		90.1-2004
Air Force	CONSOLIDATED COMMUNICATIONS FACILITY	DOVER AFB, Dover, DE	2009	13%	Yes	90.1-2004
Air Force	BIO-ENVIRONMENTAL ENGINEERING FACILITY	DOVER, Dover, DE	2008	30%		90.1-2004

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Air Force	Chapel Center	DOVER AFB Dover, DE	2010	32%		90.1-2004
Air Force	C-5 CARGO AIRCRAFT MAINTENANCE TRAINING FACILITY, PH 1	DOVER AFB Dover, DE	2009	32%		90.1-2004
Air Force	C-17 Cargo MTF Phase 2	DOVER AFB Dover, DE	2010	44%		90.1-2004
Air Force	C-5M Formal Training Unit Facility	DOVER AFB Dover, DE	2011	36%		90.1-2004
Air Force	Fitness Center	DOVER AFB Dover, DE	2008	32%		90.1-2004
Air Force	Replace Hangar/Shops	BANGOR, ME	2008	43%		90.1-2004
Air Force	Replace Fuel Cell Hangar	DULUTH, MN	2008	34%		90.1-2004
Air Force	C-130 MULTIPURPOSE MAINTENANCE HANGAR	DYESS AFB Abilene, TX	2009	32%		90.1-2004
Air Force	Repear LRE Beddown	Fort Drum Watertown, NY	2008	67%		90.1-2004
Air Force	TFI - Repear Infrastructure	Fort Drum Watertown, NY	2010	30%		90.1-2004
Air Force	FLIGHT LINE FIRE STATION	Edwards AFB Edwards, CA	2012	32%		90.1-2007
Air Force	REFUELING VEHICLE MAINTENANCE FACILITY	HURLBURT FIELD Fort Walton Beach, FL	2009	30%		90.1-2004
Air Force	Base Logistics Facility	HURLBURT FIELD Fort Walton Beach, FL	2008	28%	Yes	90.1-2004
Air Force	FLIGHT TEST OPERATIONS FACILITY (413 FLTS)	HURLBURT FIELD Fort Walton Beach, FL	2010	30%		90.1-2004

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Air Force	SOF Simulator Facility	HURLBURT FIELD Fort Walton Beach, FL	2012	28%	Yes	90.1-2007
Air Force	CHILD DEVELOPMENT CENTER	HURLBURT FIELD Fort Walton Beach, FL	2009	38%		90.1-2004
Air Force	F-35 DUKE CONTROL TOWER	EGLIN AFB Valporiso, FL	2009	54%		90.1-2004
Air Force	DORMITORY (96 RM)	EGLIN AFB Valporiso, FL	2009	77%		90.1-2004
Air Force	F-35 POL OPS FACILITY	EGLIN AFB Valporiso, FL	2009	25%	Yes	90.1-2004
Air Force	BRAC - MC CNST JSF Munitions MX Phase I	EGLIN AFB Valporiso, FL	2008	30%		90.1-2004
Air Force	F-35 Fuel Cell Maint Hangar	EGLIN AFB Valporiso, FL	2010	30%		90.1-2004
Air Force	BRAC - Dental Clinic Replacement	EGLIN AFB Valporiso, FL	2008	28%	Yes	90.1-2004
Air Force	BRAC - F-35 Integrated TRNG Center Academics BLG	EGLIN AFB Valporiso, FL	2007	39%		90.1-2004
Air Force	F-35 Student Dormitory	EGLIN AFB Valporiso, FL	2008	30%		90.1-2004
Air Force	F-35 Squadron Operations/AMU/Hangar	EGLIN AFB Valporiso, FL	2007	34%		90.1-2004
Air Force	BRAC - JSF Marine Corps/Navy Hangar (3548)	EGLIN AFB Valporiso, FL	2007	30%		90.1-2004
Air Force	BRAC - EGLIN MCP NEW FITNESS CENTER	EGLIN AFB Valporiso, FL	2009	37%		90.1-2004

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Air Force	BRAC - Eglin MCP Child Development Center	EGLIN AFB Valporiso, FL	2009	34%		90.1-2004
Air Force	BRAC - CONSTRUCT NEW CIVIL ENGINEER FACILITY	EGLIN AFB Valporiso, FL	2009	23%	Yes	90.1-2004
Air Force	BRAC - JSF F-35 Tech Training Dining Facility	EGLIN AFB Valporiso, FL	2008	38%		90.1-2004
Air Force	Child Development Center	EGLIN AFB Valporiso, FL	2009	34%		90.1-2004
Air Force	Construct 90 New MFHUs	EIELSON AFB Fairbanks, AK	2008	50%		90.1-2004
Air Force	Replace 129 MFHU	EIELSON AFB Fairbanks, AK	2007	50%		90.1-2004
Air Force	Dormitory (168 RM)	EIELSON AFB Fairbanks, AK	2010	30%		90.1-2004
Air Force	REPLACE MILITARY FAMILY HOUSING - PHASE 4 (CURRENT MISSION)	EIELSON AFB Fairbanks, AK	2009	50%		90.1-2004
Air Force	TFI - ASOS Beddown	ELLINGTON, TX	2006	30%		90.1-2004
Air Force	Munitions Maintenance Shop	HOUSTON, TX	2008	53%		90.1-2004
Air Force	Base Engineer Admin Facility	ELLSWORTH AFB Box Elder, SD	2008	27%	Yes	90.1-2004
Air Force	Access Gates and Perimeter Fence	ELLSWORTH AFB Box Elder, SD	2009	30%		90.1-2004
Air Force	Brigade Combat Team (Light) Complex	ELMENDORF AFB Anchorage, AK	2010	34%		90.1-2004
Air Force	RAILHEAD OPERATIONS FACILITY	ELMENDORF AFB Anchorage, AK	2011	30%		90.1-2004

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Air Force	BRAC-Ops and Training Fac	ELMENDORF, Anchorage, AK	2007	44%		90.1-2004
Air Force	BRAC-Medical Training Facility	ELMENDORF, Anchorage, AK	2007	50%		90.1-2004
Air Force	F-22 Corrosion Control / LO MX / Composite RPR F	ELMENDORF AFB Anchorage, AK	2008	30%		90.1-2004
Air Force	F-22 Flight Simulator	ELMENDORF AFB Anchorage, AK	2007	16%	Yes	90.1-2004
Air Force	F-22 AEROSPACE GROUND EQUIPMENT SHOP	ELMENDORF AFB Anchorage, AK	2008	32%		90.1-2004
Air Force	F-22 Jet Engine Inspection and Maintenance Facility	ELMENDORF, Anchorage, AK	2007	30%		90.1-2004
Air Force	F-22 Field Training Detachment	ELMENDORF AFB Anchorage, AK	2009	26%	Yes	90.1-2004
Air Force	F 22A 7 BAY AIRCRAFT SHELTER	ELMENDORF, Anchorage, AK	2007	38%		90.1-2004
Air Force	F-22 8-Bay Aircraft Shelter	ELMENDORF, Anchorage, AK	2007	32%		90.1-2004
Air Force	6 Bay AMU/Squad Ops	ELMENDORF AFB Anchorage, AK	2008	38%		90.1-2004
Air Force	F-22 WEAPONS LOAD TRAINING FACILITY	ELMENDORF AFB Anchorage, AK	2009	30%		90.1-2004
Air Force	F-22 7-Bay Aircraft Shelter	ELMENDORF AFB Anchorage, AK	2007	38%		90.1-2004
Air Force	Level 1 Confinement Facility	ELMENDORF AFB Anchorage, AK	2011	30%		90.1-2004

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Air Force	AEROMEDICAL SERVICES/MENTAL HEALTH CLINIC	ELMENDORF AFB Anchorage, AK	2009	24%	Yes	90.1-2004
Air Force	BRAC Construct Overwatch ESF/GOV/POV Ck, Canopy and GH	FRANCIS E WARREN AFB Cheyenne, WY	2008	21%	Yes	90.1-2004
Air Force	FITNESS CENTER	FAIRCHILD AFB Spokane, WA	2009	42%		90.1-2004
Air Force	BRAC - Relocate Combat Communications Squadron	SPOKANE, WA	2008	31%		90.1-2004
Air Force	Refueling Vehicle Maintenance Facility	FAIRCHILD AFB Spokane, WA	2010	30%		90.1-2004
Air Force	WING HEADQUARTERS	FAIRCHILD AFB Spokane, WA	2011	30%		90.1-2004
Air Force	Physiological Training Facility	FAIRCHILD AFB Spokane, WA	2008	40%		90.1-2004
Air Force	SERE Force Support Complex, Phase-1	FAIRCHILD AFB Spokane, WA	2010	30%		90.1-2004
Air Force	SERE FORCE SUPPORT COMPLEX, PHASE 2	FAIRCHILD AFB Spokane, WA	2011	30%		90.1-2004
Air Force	TFI-Reaper IOC/FOC	HANCOCK, NY	2008	29%	Yes	90.1-2004
Air Force	UAS SATCOM Relay Pads and Facility	NAVAL AIR STATION SIGONELLA Sicily, Italy	2011	30%		90.1-2004
Air Force	Air Support Operations Center	Fort RILEY Junction City, KS	2011	42%		90.1-2004
Air Force	Replace Squadron Operations Facility	FRESNO, CA	2009	31%		90.1-2004

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Air Force	Aircraft Corr. Cont. Hangar	FRESNO,CA	2011	30%		90.1-2004
Air Force	TFI-Predator LRE Beddown	Fort HUA,AZ	2008	30%		90.1-2004
Air Force	BRAC - A-10 Fuel Cell/Corr Ctl	Fort SMITH, AR	2007	30%		90.1-2004
Air Force	Replace Civil Engineer Complex	FT SMITH,AR	2009	34%		90.1-2004
Air Force	Sec Forces CATM/CATS	MILWAUKEE, WI	2008	47%		90.1-2004
Air Force	Consolidated Learning Center	GOODFELLOW AFB San Angelo, TX	2010	24%	Yes	90.1-2004
Air Force	JOINT INTEL TECHNICAL TRAINING FACILITY PHASE 1 (TFI)	GOODFELLOW AFB San Angelo, TX	2008	31%		90.1-2004
Air Force	STUDENT DORMITORY (100 RM)	GOODFELLOW AFB San Angelo, TX	2009	32%		90.1-2004
Air Force	STUDENT DORMITORY (200 RM)	GOODFELLOW AFB San Angelo, TX	2009	52%		90.1-2004
Air Force	CONSOLIDATED SECURITY FORCES FACILITY	GRAND FORKS AFB Grand Forks, ND	2010	37%		90.1-2004
Air Force	FIRE STATION	GRAND FORKS AFB Grand Forks, ND	2009	16%	Yes	90.1-2004
Air Force	Control Tower/Rapcon	GRAND FORKS AFB Grand Forks, ND	2007	42%		90.1-2004
Air Force	Squadron Operations Facility	PEORIA,IL	2008	48%		90.1-2004
Air Force	VISITING QUARTERS - PHASE 1	Pittsburgh, PA	2008	30%		90.1-2004
Air Force	Replace Acft Maintenance Shops	New Castle, Delaware	2006	30%		90.1-2004
Air Force	TFI-Info Operations Sqdrn	New Castle, Delaware	2006	30%		90.1-2004

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Air Force	F-16 Mission Training Center (Flight Sim) Facility	SAN ANTONIO,TX	2009	30%		90.1-2004
Air Force	Replace Security Forces Facilities	KLAMATH FALLS,OR	2010	30%		90.1-2004
Air Force	Fire Crash and Rescue Station	FARGO, ND	2004	35%		90.1-2004
Air Force	F-22 FIGHTER ALERT FACILITY	HICKAM AFB Honolulu, HI	2009	30%		90.1-2004
Air Force	BRAC-Flight Simulator Facility	HICKAM, HI	2006	34%		90.1-2004
Air Force	GROUND CONTROL TOWER	HICKAM AFB Honolulu, HI	2010	30%		90.1-2004
Air Force	TFI- F-22 LO/Composite Rep Fac	HICKAM, HI	2007	60%		90.1-2004
Air Force	TFI -F-22 Hangar/Sq Ops /AMU	HICKAM, HI	2008	40%		90.1-2004
Air Force	TFI - F-22 Flight Simulator Facility	HICKAM, HI	2008	33%		90.1-2004
Air Force	TFI - F-22 Weapons Load Crew Training Facility	HICKAM, HI	2010	42%		90.1-2004
Air Force	DGS INTEL Squadron Operations Facility	HICKAM, Honolulu, HI	2007	30%		90.1-2004
Air Force	Fire Crash Rescue Station	HILL AFB Ogden, UT	2011	32%		90.1-2004
Air Force	F-22 Radar Cross Section Testing Fac	HILL AFB Ogden, UT	2009	30%		90.1-2004
Air Force	Munition Maintenance Facility	HILL AFB Ogden, UT	2008	22%	Yes	90.1-2004
Air Force	F-22 Heavy Maintenance Facility and Composite Back Shop	HILL AFB Ogden, UT	2008	25%	Yes	90.1-2004
Air Force	DMTR Aircraft Power Systems Repair Facility	HILL, Ogden, UT	2007	19%	Yes	90.1-2004
Air Force	Hydraulic Flight Control Facility	HILL AFB Ogden, UT	2007	31%		90.1-2004

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Air Force	Child Development Center	HILL AFB Ogden, UT	2009	26%	Yes	90.1-2004
Air Force	Reserve Squadron Ops/AMU	HILL AFB Ogden, UT	2010	30%		90.1-2004
Air Force	THREE-BAY FIRE STATION	HILL AFB Ogden, UT	2009	41%		90.1-2004
Air Force	F-22 System Support Facility	HILL AFB Ogden, UT	2011	34%		90.1-2004
Air Force	Child Development Center	HOLLOMAN AFB Alamogordo, NM	2011	34%		90.1-2004
Air Force	FIRE/CRASH RESCUE STATION	HOLLOMAN AFB Alamogordo, NM	2010	30%		90.1-2004
Air Force	F-22A CONSOLIDATED MUNITIONS MAINTENANCE - TFI	HOLLOMAN AFB Alamogordo, NM	2010	53%		90.1-2004
Air Force	F-22 Aircraft Maintenance Unit	HOLLOMAN AFB Alamogordo, NM	2008	30%		90.1-2004
Air Force	UAS MAINTENANCE HANGAR	HOLLOMAN AFB Alamogordo, NM	2010	30%		90.1-2004
Air Force	UAS FTU COMPLEX	HOLLOMAN AFB Alamogordo, NM	2008	30%		90.1-2004
Air Force	F-16 ACADEMIC TRAINING FACILITY	HOLLOMAN AFB Alamogordo, NM	2011	30%		90.1-2004
Air Force	F-16 SEAD TRAINING FACILITY	HOLLOMAN AFB Alamogordo, NM	2011	30%		90.1-2004
Air Force	MQ-9 Maintenance Hangar	HOLLOMAN AFB Alamogordo, NM	2012	30%		90.1-2007
Air Force	F-22 Aerospace Ground Equipment (AGE) Facility	HOLLOMAN AFB Alamogordo, NM	2008	30%		90.1-2004
Air Force	COMMUNITY ACTIVITY CENTER/TROOP FEEDING FACILITY	Homestead, Homestead, FL	2010	30%		90.1-2004

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Air Force	CONSOLIDATED COMMUNITY CENTER (In concept design phase)	INCIRLIK AB Adana, Turkey	2009	18%	Yes	90.1-2004
Air Force	DORMITORY 216 PN	INCIRLIK AB Adana, Turkey	2011	32%		90.1-2004
Air Force	Replace Troop Training Qtrs	Fort IND, PA	2008	52%		90.1-2004
Air Force	UAS Operations Facility	CREECH AFB Indian Springs, NV	2008	10%	Yes	90.1-2004
Air Force	UAS Dining Hall	CREECH AFB Indian Springs, NV	2007	30%		90.1-2004
Air Force	UAS Flight Simulator and Academics Facility	CREECH AFB Indian Springs, NV	2009	30%		90.1-2004
Air Force	UAS 432 Wing HQ Mission Support Facility	CREECH AFB Indian Springs, NV	2007	30%		90.1-2004
Air Force	UAS Airfield Fire/Crash Rescue Station	CREECH AFB Indian Springs, NV	2010	30%		90.1-2004
Air Force	Communicatons Training Facility	JACKSONVILLE,FL	2005	38%		90.1-2004
Air Force	Security Forces Training Facility	JACKSONVILLE,FL	2008	37%		90.1-2004
Air Force	Conventional Munitions Storage	JOE FOSS, SD	2008	50%		90.1-2004
Air Force	Replace Maint Hangar/Shops	YEAGER, WV	2005	50%		90.1-2004
Air Force	Fuel System Hangar/shops	YEAGER, WV	2008	50%		90.1-2004
Air Force	INDOOR FIRING RANGE	KEESLER AFB Biloxi, MS	2009	25%	Yes	90.1-2004
Air Force	DORMITORY (144 PN)	KEESLER AFB Biloxi, MS	2009	35%		90.1-2004

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Air Force	DIAGNOSTIC IMAGING CENTER	KEESLER AIR FORCE BASE, Biloxi, MS	2007	22%	Yes	90.1-2004
Air Force	DORMITORY (144 RM)	KEESLER AFB Biloxi, MS	2011	73%		90.1-2004
Air Force	Construct PJ/CRO Rescue & Recovery Training Center	KIRTLAND, Albuquerque, NM	2008	30%		90.1-2004
Air Force	BRAC - Kirtland Battlespace Environment Lab	KIRTLAND AFB Albuquerque, NM	2007	31%		90.1-2004
Air Force	Construct PJ/CRO Logistics Bldg	KIRTLAND, Albuquerque, NM	2007	30%		90.1-2004
Air Force	Armament Shop	KIRTLAND AFB Albuquerque, NM	2010	30%		90.1-2004
Air Force	MC-130 Simulator Facility	KIRTLAND AFB Albuquerque, NM	2009	30%		90.1-2004
Air Force	HC-130 Simulator Facility	KIRTLAND AFB Albuquerque, NM	2009	30%		90.1-2004
Air Force	H/MC-130 Fuel System Maintenance Facility	KIRTLAND AFB Albuquerque, NM	2010	30%		90.1-2004
Air Force	AFNWC Sustainment Center	KIRTLAND AFB Albuquerque, NM	2011	32%		90.1-2004
Air Force	Nuclear Systems Wing & Sustainment Center Ph 2	KIRTLAND AFB Albuquerque, NM	2011	30%		90.1-2004
Air Force	CONCOLIDATED DENTAL CLINIC	LACKLAND AFB San Antonio, TX	2009	42%		90.1-2004
Air Force	BRAC-Intelligence Operations Center	LACKLAND AFB San Antonio, TX	2008	21%	Yes	90.1-2004

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Air Force	BRAC - Headquarters Admin Center	LACKLAND AFB San Antonio, TX	2008	25%	Yes	90.1-2004
Air Force	AMBULATORY HEALTH CLINIC PHASE 1	LACKLAND AFB San Antonio, TX	2009	40%		90.1-2004
Air Force	BRAC Construct Equipment Warehouse Tops in Blue	LACKLAND, San Antonio, TX	2007	30%		90.1-2004
Air Force	Evasion, Conduct After Capture Training Facility	LACKLAND AFB San Antonio, TX	2009	30%		90.1-2004
Air Force	DORMITORY (96 RM)	LACKLAND AFB San Antonio, TX	2012	30%		90.1-2007
Air Force	BRAC - FSH METC Medical Instruction Facilities (INCR 1)	Fort SAM HOUSTON San Antonio, TX	2007	21%	Yes	90.1-2004
Air Force	BRAC - FSH METC Medical Instruction Facilities (INCR 2)	Fort SAM HOUSTON San Antonio, TX	2007	21%	Yes	90.1-2004
Air Force	BRAC - FSH METC MEDICAL INSTRUCTION FACILITIES (INCR 3)	Fort SAM HOUSTON San Antonio, TX	2008	30%		90.1-2004
Air Force	BRAC-METC MIF HQ/ADMIN FAC	Fort SAM HOUSTON San Antonio, TX	2008	34%		90.1-2004
Air Force	Medical Instructional Facility 5	Fort SAM HOUSTON San Antonio, TX	2008	41%		90.1-2004
Air Force	BRAC - FSH METC Dining Facilities (2 @ 2400 PN), INCR 1	Fort SAM HOUSTON San Antonio, TX	2007	15%	Yes	90.1-2004
Air Force	BRAC – FSH METC Student Dorm 1 (1200PN)	Fort SAM HOUSTON San Antonio, TX	2007	27%	Yes	90.1-2004

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Air Force	BRAC – FSH METC Student Dorm 2 (1200PN)	Fort SAM HOUSTON San Antonio, TX	2007	27%	Yes	90.1-2004
Air Force	BMT Recruit Dormitory	LACKLAND AFB San Antonio, TX	2008	38%		90.1-2004
Air Force	BMT RECRUIT DORMITORY 2, PHASE 2	LACKLAND AFB San Antonio, TX	2009	34%		90.1-2004
Air Force	Basic Military Training (BMT) Recruit Dorm #3	LACKLAND AFB San Antonio, TX	2010	43%		90.1-2004
Air Force	Basic Military Training (BMT) Dormitory #4	LACKLAND AFB San Antonio, TX	2011	33%		90.1-2004
Air Force	BMT SATELLITE CLASSROOMS/DINING FACILITY, No. 1	LACKLAND AFB San Antonio, TX	2009	30%		90.1-2004
Air Force	Basic Military Training (BMT) Satellite Classroom/Dining Facility #2	LACKLAND AFB San Antonio, TX	2010	30%		90.1-2004
Air Force	BRAC-METC Student Activity Center.	Fort SAM HOUSTON San Antonio, TX	2009	30%		90.1-2004
Air Force	BRAC – FSH METC Student Dorm 3 (1200PN)	Fort SAM HOUSTON San Antonio, TX	2009	27%	Yes	90.1-2004
Air Force	Recruit/Family Inprocessing & Information Center	LACKLAND AFB San Antonio, TX	2010	30%		90.1-2004
Air Force	AMBULATORY CARE CENTER P2	LACKLAND AFB San Antonio, TX	2009	40%		90.1-2004
Air Force	AMBULATORY CARE CENTER P3	LACKLAND AFB San Antonio, TX	2009	40%		90.1-2004

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		Antonio, TX				
Air Force	BRAC - FSH METC Physical Fitness Center	Fort SAM HOUSTON San Antonio, TX	2009	25%	Yes	90.1-2004
Air Force	BRAC-JOINT BASE SAN ANTONIO HEADQUARTERS FACILITY	Fort SAM HOUSTON San Antonio, TX	2009	21%	Yes	90.1-2004
Air Force	BRAC-502 ABW BOS ADMINISTRATION FACILITY	Fort SAM HOUSTON San Antonio, TX	2009	21%	Yes	90.1-2004
Air Force	BRAC-Const ACP & VCC at SAMMC-N	Fort SAM HOUSTON San Antonio, TX	2011	30%		90.1-2004
Air Force	BRAC-STUDENT ACTIVITY CENTER	Fort SAM HOUSTON San Antonio, TX	2011	30%		90.1-2004
Air Force	Advance Individual Trainee (AIT) Barracks (300 RM)	Fort SAM HOUSTON San Antonio, TX	2011	30%		90.1-2004
Air Force	One Company Fire Station	Fort Sam Houston San Antonio, TX	2010	30%		90.1-2004
Air Force	Consolidated Security Forces Ops	LACKLAND AFB San Antonio, TX	2009	30%		90.1-2004
Air Force	Large Vehicle Inspection Station	LAKENHEATH AFB Brandon, UK	2008	30%		90.1-2004
Air Force	Small Diameter Bomb - Storage Igloo	LAKENHEATH, Brandon, UK	2007	30%		90.1-2004
Air Force	REPLACE MILITARY FAMILY HOUSING (182 UNITS)	LAKENHEATH AFB Brandon, UK	2008	24%	Yes	90.1-2004
Air Force	BRAC-Relocate 157 AOG	ST LOUIS, MO	2009	26%	Yes	90.1-2004

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Air Force	WEST AND LASALLE GATE FORCE PROTECTION/ACCESS	LANGLEY AFB Hampton, VA	2009	20%	Yes	90.1-2004
Air Force	Consolidated Student Activity Center/Library	LAUGHLIN AFB Del Rio, TX	2009	33%		90.1-2004
Air Force	Construct Acquisition Mgt Facility, Phase I	HANSCOM AFB Bedford, MA	2008	31%		90.1-2004
Air Force	Replace Engine Shop	LITTLE ROCK, AR	2006	35%		90.1-2004
Air Force	BRAC - C-130 Maintenance Facility	LITTLE ROCK AFB Jacksonville, AR	2007	30%		90.1-2004
Air Force	C-130J FUEL SYSTEMS MAINTENANCE HANGAR	LITTLE ROCK AFB Jacksonville, AR	2011	30%		90.1-2004
Air Force	SECURITY FORCES OPERATIONS FACILITY	LITTLE ROCK AFB Jacksonville, AR	2009	30%		90.1-2004
Air Force	EMERGENCY PEST MANAGEMENT FACILITY	LITTLE ROCK AFB Jacksonville, AR	2012	30%		90.1-2007
Air Force	Education Center Complex	LITTLE ROCK AFB Jacksonville, AR	2008	21%	Yes	90.1-2004
Air Force	Communications Electronics	LOVELL, TN	2007	44%		90.1-2004
Air Force	F-35 Academic Training Center	LUKE AFB Phoenix, AZ	2010	52%		90.1-2004
Air Force	F-35 Squadron Ops Facility	LUKE AFB Phoenix, AZ	2010	44%		90.1-2004
Air Force	Dormitory (96 Rm)	LUKE AFB Phoenix, AZ	2011	30%		90.1-2004
Air Force	F-35 Training Detachment	LUKE AFB Phoenix, AZ	2011	30%		90.1-2004

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Air Force	Communications Facility	LUKE AFB Phoenix, AZ	2011	30%		90.1-2004
Air Force	CONSOLIDATED COMMUNICATIONS FACILITY	MACDILL AFB Tampa, FL	2010	12%	Yes	90.1-2004
Air Force	Mission Support Facility	MACDILL AFB Tampa, FL	2010	30%		90.1-2004
Air Force	Replace USCENTCOM Headquarters	MACDILL AFB Tampa, FL	2008	37%		90.1-2004
Air Force	DORMITORY (120 RM)	MACDILL AFB Tampa, FL	2009	25%	Yes	90.1-2004
Air Force	COMBAT TRAINING FACILITY	MACDILL AFB Tampa, FL	2009	14%	Yes	90.1-2004
Air Force	Explosive Ordnance Disposal Facility	MACDILL AFB Tampa, FL	2008	21%	Yes	90.1-2004
Air Force	CHILD DEVELOPMENT CENTER	MACDILL AFB Tampa, FL	2009	30%		90.1-2004
Air Force	SOCCENT COMMANDANT & CULTURAL ENGAGEMENT GROUP FACILITY	MACDILL AFB Tampa, FL	2009	32%		90.1-2004
Air Force	SOCCENT Headquarters & Commandant Facilities	MACDILL AFB Tampa, FL	2007	34%		90.1-2004
Air Force	Community Activity Center	MALMSTROM AFB Great Falls, MT	2008	30%		90.1-2004
Air Force	TFI-RED HORSE Squadron Beddown	MANSFIELD, OH	2007	45%		90.1-2004
Air Force	Construct New Airfield Control Tower, B1295 & Base Op's B395	March, Moreno Valley, CA	2012	30%		90.1-2007

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Air Force	Maintenance Hangar	March ARB, CA	2007	30%		90.1-2004
Air Force	Small Arms Firing Range	March, Moreno Valley, CA	2010	30%		90.1-2004
Air Force	TFI - C-27 Conversion - Squadron Operations Facility	BALTIMORE,MD	2010	30%		90.1-2004
Air Force	Replace Operations and Medical Training Facility	BALTIMORE,MD	2009	41%		90.1-2004
Air Force	Replace Fire Station	MARTIN STATE, MD	2006	38%		90.1-2004
Air Force	ASBC CATM Training Facility	MAXWELL AFB Montgomery, AL	2008	28%	Yes	90.1-2004
Air Force	262 IWAS Facility	MCCHORD, WA	2006	25%	Yes	90.1-2004
Air Force	BRAC - STAMP Relocation	MCCONNEL, KS	2006	44%		90.1-2004
Air Force	BRAC - STRAPP Relocation	MCCONNEL, KS	2007	39%		90.1-2004
Air Force	MXG Consolidation and Forward Logistics Ph1	MCCONNELL AFB Wichita, KS	2008	10%	Yes	90.1-2004
Air Force	MXG CONSOLIDATION AND FORWARD LOGISTICS CENTER PH 2	MCCONNELL AFB Wichita, KS	2009	10%	Yes	90.1-2004
Air Force	Air Traffic Control Tower	MCCONNELL AFB Wichita, KS	2012	30%		90.1-2007
Air Force	Replace Squadron Operations	KNOXVILLE, TN	2007	42%		90.1-2004
Air Force	MUNITIONS STORAGE AREA, PHASE 1	MCGUIRE AFB Cookstown, NJ	2012	30%		90.1-2007
Air Force	Replace Base Civil Engineer Complex	WRIGHTSTOWN,NJ	2008	30%		90.1-2004
Air Force	Base Ops Command Post	MCGUIRE AFB	2009	30%		90.1-2004

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		Cookstown, NJ				
Air Force	Warfighter Family Service Center	MCGUIRE AFB Cookstown, NJ	2010	30%		90.1-2004
Air Force	SECURITY FORCES OPERATIONS FACILITY PH 1	MCGUIRE AFB Cookstown, NJ	2009	30%		90.1-2004
Air Force	DORMITORY (120 ROOM)	MCGUIRE AFB Cookstown, NJ	2010	30%		90.1-2004
Air Force	USAF EC JIEDDO Training Facility	MCGUIRE AFB Cookstown, NJ	2008	30%		90.1-2004
Air Force	BCE Facilities	MEMPHIS, TN	2008	64%		90.1-2004
Air Force	BASE OPERATIONS FACILITY	MINOT AFB Minot, ND	2010	33%		90.1-2004
Air Force	CONTROL TOWER	MINOT AFB Minot, ND	2010	39%		90.1-2004
Air Force	Dormitory (144 RM)	MINOT, Minot, ND	2007	30%		90.1-2004
Air Force	DORMITORY (168 RM)	MINOT AFB Minot, ND	2009	48%		90.1-2004
Air Force	FY10 Dormitory (168 Rm)	MINOT AFB Minot, ND	2010	36%		90.1-2004
Air Force	Dormitory (168 RM)	MINOT AFB Minot, ND	2011	36%		90.1-2004
Air Force	B-52 3-Bay Conventional Munitions Mtc Facility	MINOT AFB Minot, ND	2011	26%	Yes	90.1-2004
Air Force	B-52 Two-Bay Phase Maintenance Dock	MINOT AFB Minot, ND	2011	32%		90.1-2004
Air Force	DORMITORY (168 RM)	MINOT AFB Minot, ND	2011	53%		90.1-2004

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Air Force	MHU-196 Munitions Trailer Storage	MINOT AFB Minot, ND	2010	33%		90.1-2004
Air Force	Missile Procedures Training Operations Facility	MINOT AFB Minot, ND	2009	42%		90.1-2004
Air Force	Replace Pararescue Training Facility	SUNNYVALE, CA	2011	30%		90.1-2004
Air Force	RESCUE OPERATIONS/MAINTENANCE HEADQUARTERS FAC	MOODY AFB Valdosta, GA	2010	30%		90.1-2004
Air Force	COMMERCIAL ACCESS GATE	MOODY AFB Valdosta, GA	2008	18%	Yes	90.1-2004
Air Force	BRAC DORMITORY 120 PN	MOODY AFB Valdosta, GA	2007	42%		90.1-2004
Air Force	BRAC - TF-34 Engine Shop (A 10 BD)	MOODY AFB Valdosta, GA	2008	30%		90.1-2004
Air Force	HC-130J SIMULATOR FACILITY	MOODY AFB Valdosta, GA	2011	30%		90.1-2004
Air Force	CHILD DEVELOPMENT CENTER	MOODY AFB Valdosta, GA	2009	42%		90.1-2004
Air Force	LOGISTICS READINESS CENTER	MOUNTAIN HOME AFB Moutain Home, ID	2008	36%		90.1-2004
Air Force	Civil Engineer Maintenance Facilities	MOUNTAIN HOME AFB, Moutain Home, ID	2012	30%		90.1-2007
Air Force	JTAC VIRTUAL TRAINING FACILITY	NELLIS AFB Las Vegas, NV	2008	30%		90.1-2004

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Air Force	F-16 AGGRESSOR SQUADRON OPS/INFRASTRUCTURE	NELLIS AFB Las Vegas, NV	2008	15%	Yes	90.1-2004
Air Force	CHILD DEVELOPMENT CENTER	NELLIS AFB Las Vegas, NV	2009	26%	Yes	90.1-2004
Air Force	AIRFIELD FIRE RESCUE STATION	NELLIS AFB Las Vegas, NV	2009	35%		90.1-2004
Air Force	F 35 A Hangar / AMU	NELLIS AFB Las Vegas, NV	2010	30%		90.1-2004
Air Force	F16 Aggressor Hanger/Aircraft Maintenance Unit GF	NELLIS AFB Las Vegas, NV	2008	15%	Yes	90.1-2004
Air Force	F-16 Aggressor Hanger/Aircraft Maintenance Unit	NELLIS AFB Las Vegas, NV	2008	25%	Yes	90.1-2004
Air Force	F-35A AGE Facility	NELLIS AFB Las Vegas, NV	2011	30%		90.1-2004
Air Force	COMMUNICATIONS NETWORK CONTROL CENTER	NELLIS AFB Las Vegas, NV	2011	30%		90.1-2004
Air Force	F-35 Flight Simulator	NELLIS AFB Las Vegas, NV	2009	30%		90.1-2004
Air Force	MEDICAL EDUCATION & TRAINING FACILITY REPLACEMENT	NELLIS AFB Las Vegas, NV	2012	30%		90.1-2007
Air Force	DINING HALL	Niagara Falls, NY	2009	30%		90.1-2004
Air Force	Visiting Quarters	Niagara ARS, NY	2007	30%		90.1-2004
Air Force	COMMUNITY ACTIVITIES CENTER	Niagara Falls, NY	2009	30%		90.1-2004
Air Force	INDOOR SMALL ARMS RANGE	Niagara Falls, NY	2010	30%		90.1-2004
Air Force	Vehicle Maintenance Fac	Niagara Falls ARS,	2012	30%		90.1-2007

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		Buffalo, NY				
Air Force	NW FIELD COMMANDO WARRIOR OPERATIONS FACILITY	ANDERSEN AFB Yigo, Guam	2008	20%	Yes	90.1-2004
Air Force	NW Field Technical Training Facility	ANDERSEN AFB Yigo, Guam	2008	30%		90.1-2004
Air Force	NW Field Combat Support Vehicle Maint Facility	ANDERSEN AFB Yigo, Guam	2009	30%		90.1-2004
Air Force	REDHORSE CANTONMENT OPERATIONS FACILITY	ANDERSEN AFB Agana, Guam	2011	30%		90.1-2004
Air Force	COMBAT COMMUNICATIONS TRANSMISSION SYSTEM FACILITY	ANDERSEN AFB Agana, Guam	2011	30%		90.1-2004
Air Force	RED HORSE Headquarters/Engineering Facility	ANDERSEN AFB Agana, Guam	2011	30%		90.1-2004
Air Force	Red Horse Air Field Operations Facility	ANDERSEN AFB Agana, Guam	2011	30%		90.1-2004
Air Force	COMBAT COMMUNICATIONS OPERATIONS FACILITY	ANDERSEN AFB Agana, Guam	2010	30%		90.1-2004
Air Force	Combat Communications Maintenance Facility	ANDERSEN AFB Yigo, Guam	2009	32%		90.1-2004
Air Force	USSTRATCOM Replacement Facility - Incr 1	OFFUTT AFB Bellview, NB	2010	17%	Yes	90.1-2004
Air Force	STRATCOM GATE	OFFUTT AFB Bellview, NB	2010	30%		90.1-2004
Air Force	Replace Ops and Training /ADAL DGS	FALMOUTH,MA	2009	35%		90.1-2004

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Air Force	Replace Ops and Training /ADAL DGS	FALMOUTH,MA	2008	48%		90.1-2004
Air Force	TFI Digital Ground Station,	OTIS, MA	2008	10%	Yes	90.1-2004
Air Force	Combat Weapons Training Facility	PATRICK AFB Cocoa Beach, FL	2010	72%		90.1-2004
Air Force	Air Force Technical Applications Center	PATRICK AFB Cocoa Beach, FL	2010	30%		90.1-2004
Air Force	Replace Squadron Operations Facilities	PORTSMOUTH,NH	2008	30%		90.1-2004
Air Force	Replace Ops and Training	PEASE, NH	2007	40%		90.1-2004
Air Force	National Security Space Institute	PETERSON AFB Colorado Springs, CO	2009	9%	Yes	90.1-2004
Air Force	East gate	PETERSON AFB Colorado Springs, CO	2010	16%	Yes	90.1-2004
Air Force	RAIDRS	PETERSON AFB Colorado Springs, CO	2010	31%		90.1-2004
Air Force	ACTIVE ASSOCIATE SQUAD OPS/AMU (TFI)	PETERSON AFB Colorado Springs, CO	2010	31%		90.1-2004
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER	PETERSON AFB Colorado Springs, CO	2009	9%	Yes	90.1-2004
Air Force	Replace Troop Quarters	ALPENA, MI	2006	36%		90.1-2004
Air Force	SOF Training Facility	POPE AFB Fayetteville, NC	2012	30%		90.1-2007
Air Force	AIR TRAFFIC CONTROL TOWER	POPE AFB Fayetteville, NC	2010	30%		90.1-2004

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Air Force	C-130 Flight Simulator	POPE AFB Fayetteville, NC	2011	14%	Yes	90.1-2004
Air Force	Construct ATC Control Tower	QUONSET, RI	2008	42%		90.1-2004
Air Force	Joint Mobility Processing Center	RAMSTEIN AFB Ramstein, Germany	2008	30%		90.1-2004
Air Force	Dormitory - 128 RM	RAMSTEIN AFB Ramstein, Germany	2007	30%		90.1-2004
Air Force	CONSTRUCT AEROSPACE GROUND EQUIPMENT MAINTENANCE COMPLEX	RAMSTEIN AFB Ramstein, Germany	2010	40%		90.1-2004
Air Force	CONTINGENCY RESPONSE GROUP COMPOUND - CLOSE SEMBACH	RAMSTEIN AFB Ramstein, Germany	2009	28%	Yes	90.1-2004
Air Force	REPLACE FAMILY HOUSING, PH E	RAMSTEIN AFB Ramstein, Germany	2008	30%		90.1-2004
Air Force	BRAC Admin Center (CPO)	RANDOLPH, San Antonio, TX	2008	21%	Yes	90.1-2004
Air Force	BRAC IFF BDDN Hanger 6 RENO	RANDOLPH, San Antonio, TX	2008	21%	Yes	90.1-2004
Air Force	BRAC - Pensacola USAF Navigator Training Hangar	RANDOLPH, San Antonio, TX	2007	35%		90.1-2004
Air Force	BRAC - Pensacola CSO Applied Instruction Facility	RANDOLPH, San Antonio, TX	2007	21%	Yes	90.1-2004
Air Force	BRAC - CSO Bachelor Housing	RANDOLPH AFB San Antonio, TX	2008	30%		90.1-2004
Air Force	Replace Fire Station	RENO, NV	2008	54%		90.1-2004

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Air Force	Aircraft Hangar	WARNER ROBINS AFB Warner Robins, GA	2008	32%		90.1-2004
Air Force	AVIONICS FACILITY	WARNER ROBINS AFB Warner Robins, GA	2009	30%		90.1-2004
Air Force	Command Post Facility	WARNER ROBINS AFB Warner Robins, GA	2008	30%		90.1-2004
Air Force	Aircraft Component Repair Facility	WARNER ROBINS, Warner Robins, GA	2007	11%	Yes	90.1-2004
Air Force	Replace Fire Station	ROSECRANS, MO	2004	42%		90.1-2004
Air Force	Global Hawk Aircraft Maintenance and Operations Complex	NAVAL AIR STATION SIGONELLA Sicily, Italy	2009	30%		90.1-2004
Air Force	Repl Fire Station	SALT LAKE, UT	2004	32%		90.1-2004
Air Force	Fire Station, Phase 2	SALT LAKE, UT	2004	32%		90.1-2004
Air Force	Medical Logistics Warehouse	SCOTT AFB Belleville, IL	2011	30%		90.1-2004
Air Force	AEROMEDICAL EVACUATION FACILITY	SCOTT AFB Belleville, IL	2008	38%		90.1-2004
Air Force	BRAC - Construct A-10 Munitions Maintenance Shop	MT CLEMENS,MI	2009	77%		90.1-2004
Air Force	BRAC - Construct Munitions Admin Building	MT CLEMENS,MI	2009	55%		90.1-2004
Air Force	BRAC - Construct Munitions Missile Maintenance Bays	MT CLEMENS,MI	2009	79%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Air Force	Air Support Operations Squadron,	Vilseck Garrison Vilseck, Germany	2009	30%		90.1-2004
Air Force	RADAR APPROACH CONTROL COMPLEX, PH 1	SEYMOUR JOHNSON AFB Goldsboro, NC	2010	30%		90.1-2004
Air Force	AIR TRAFFIC CONTROL TOWER/BASE OPERATIONS COMPLEX	SEYMOUR JOHNSON AFB Goldsboro, NC	2011	30%		90.1-2004
Air Force	MEDICAL CLINIC REPLACEMENT	SEYMOUR JOHNSON AFB Goldsboro, NC	2011	30%		90.1-2004
Air Force	CONSOLIDATED SUPPORT CENTER	SEYMOUR JOHNSON AFB Goldsboro, NC	2009	30%		90.1-2004
Air Force	Physical Fitness Center	SHAW AFB Sumter, SC	2009	30%		90.1-2004
Air Force	BRAC HQ USARCENT (B1957)	SHAW AFB Sumter, SC	2009	30%		90.1-2004
Air Force	BRAC HQ USARCENT (B1958)	SHAW AFB Sumter, SC	2009	30%		90.1-2004
Air Force	BRAC HQ USARCENT (B1947)	SHAW AFB Sumter, SC	2009	30%		90.1-2004
Air Force	BRAC Fitness Center	SHAW AFB Sumter, SC	2008	24%	Yes	90.1-2004
Air Force	BRAC Child Development Center	SHAW AFB Sumter, SC	2008	23%	Yes	90.1-2004
Air Force	BRAC Transient Lodging Facility	SHAW AFB Sumter, SC	2008	23%	Yes	90.1-2004
Air Force	BRAC Visiting Officers Quarters	SHAW AFB Sumter, SC	2008	23%	Yes	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Air Force	DORMITORY (144 RM)	SHAW AFB Sumter, SC	2009	26%	Yes	90.1-2004
Air Force	Medical Clinic	SHAW AFB Sumter, SC	2011	35%		90.1-2004
Air Force	Technical Training Support Facil.	SHEPPARD AFB Witchita Falls, TX	2009	32%		90.1-2004
Air Force	EUROPEAN NATO JOINT JET PILOT TRAINING OPERATIONS	SHEPPARD AFB Witchita Falls, TX	2010	44%		90.1-2004
Air Force	Range Support Facility Complex	SMOKY HILL, KS	2007	30%		90.1-2004
Air Force	CONSTRUCT FITNESS CENTER	SPANGDAHLEM AB Trier, Germany	2009	30%		90.1-2004
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER	SPANGDAHLEM AB Trier, Germany	2009	30%		90.1-2004
Air Force	Combat Comm Tng Complex	SPRINGFIELD, OH	2008	70%		90.1-2004
Air Force	20th Air Support Operations Squadron Complex	Fort Drum Watertown, NY	2010	30%		90.1-2004
Air Force	AIT Barracks Complex, Ph 2	LANGLEY AFB Hampton, VA	2011	36%		90.1-2004
Air Force	Base Defense Group Beddown	NEWBURGH,NY	2009	41%		90.1-2004
Air Force	Realign Air Depot St at Tinker Gate	TINKER AFB Oklahoma City, OK	2009	25%	Yes	90.1-2004
Air Force	Child Development Center	TINKER AFB Oklahoma City, OK	2010	35%		90.1-2004
Air Force	Consolidated Fuel Overhaul, Repair and Test Facility	TINKER AFB Oklahoma City, OK	2007	34%		90.1-2004
Air Force	Aircraft Hangar	TINKER AFB	2008	28%	Yes	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
		Oklahoma City, OK				
Air Force	Multi-Use Instructional Facility	TOLEDO, OH	2001	34%		90.1-2004
Air Force	Munitions Storage Complex	TOLEDO, OH	2009	30%		90.1-2004
Air Force	CONSTRUCT KC-10 CARGO LOAD TRAINING (CLT) FACILITY	TRAVIS AFB Fairfield, CA	2009	14%	Yes	90.1-2004
Air Force	Dormitory (144 RM)	TRAVIS AFB Fairfield, CA	2011	30%		90.1-2004
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER (CDC)	TRAVIS AFB Fairfield, CA	2011	30%		90.1-2004
Air Force	GLOBAL SUPPORT SQUADRON FACILITY	TRAVIS AFB Fairfield, CA	2008	19%	Yes	90.1-2004
Air Force	BCE Office/Warehouse	TRAVIS AFB Fairfield, CA	2011	30%		90.1-2004
Air Force	LARGE CRASH RESCUE STATION	TRAVIS AFB Fairfield, CA	2009	21%	Yes	90.1-2004
Air Force	Relocate ASOS Facilities	SAVANNAH,GA	2008	32%		90.1-2004
Air Force	Comm Audiovisual Facility	TRUAX FIELD, WI	2007	37%		90.1-2004
Air Force	FITNESS CENTER	TYNDALL AFB Panama City, FL	2007	42%		90.1-2004
Air Force	325 ACS OPS TRAINING COMPLEX	TYNDALL AFB Panama City, FL	2009	44%		90.1-2004
Air Force	1 AF AFFOR Center, PH 3	TYNDALL AFB Panama City, FL	2008	30%		90.1-2004
Air Force	F-22 MUNTIONS STORAGE COMPLEX	TYNDALL AFB Panama City, FL	2011	30%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Air Force	Const Vehicle Search Facility	USAF ACADEMY Colorado Springs, CO	2011	44%		90.1-2004
Air Force	AFA - Center for Character and Leadership Development	USAF ACADEMY Colorado Springs, CO	2009	30%		90.1-2004
Air Force	CONTROL TOWER	VANCE AFB Enid, OK	2010	47%		90.1-2004
Air Force	Fuel System Maintenance Hangar	VANCE AFB Enid, OK	2008	63%		90.1-2004
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER	VANDENBERG AFB Lompoc, CA	2009	39%		90.1-2004
Air Force	Education Center	VANDENBERG AFB Lompoc, CA	2010	30%		90.1-2004
Air Force	Joint Space Operations Center (JSpOC)	VANDENBERG AFB Lompoc, CA	2011	30%		90.1-2004
Air Force	CONSTRUCT ASOC COMPLEX	WHEELER ADMIN ANNEX Oahu, HI	2009	30%		90.1-2004
Air Force	Consolidated Communications Facility	WHITEMAN AFB Knob Noster, MO	2008	30%		90.1-2004
Air Force	EOD OPERATIONS COMPLEX	WHITEMAN AFB Knob Noster, MO	2010	30%		90.1-2004
Air Force	WSA Security Control Facility	WHITEMAN AFB Knob Noster, MO	2011	44%		90.1-2004
Air Force	CNST MLA & MHU TRAILER STORAGE FACILITY	WHITEMAN AFB Knob Noster, MO	2011	30%		90.1-2004
Air Force	FORCE SUPPORT SQUADRON FACILITY	WHITEMAN AFB Knob Noster, MO	2012	38%		90.1-2007

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Air Force	TFI-ASOS Beddown	WILL ROGERS, OK	2006	30%		90.1-2004
Air Force	Information Technology Complex, PH 1	WRIGHT PATTERSON AFB Fairborn, OH	2009	14%	Yes	90.1-2004
Air Force	SECURITY FORCES OPERATIONS FACILITY	WRIGHT PATTERSON AFB Fairborn, OH	2008	30%		90.1-2004
Air Force	Conversion for Advanced Power and Thermal Research Lab	WRIGHT PATTERSON AFB Fairborn, OH	2009	30%		90.1-2004
Air Force	BRAC - Radiation Calibration Facility	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		90.1-2004
Air Force	BRAC - AFIOH Facility	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		90.1-2004
Air Force	BRAC - AFRL/HE (Mesa)	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		90.1-2004
Air Force	BRAC - AFRL/HE (Brooks)	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		90.1-2004
Air Force	BRAC - USAFSAM Consult Service	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		90.1-2004
Air Force	BRAC - USAFSAM (INC 2)	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		90.1-2004
Air Force	BRAC - Pipeline Dormitory	WRIGHT PATTERSON AFB Fairborn, OH	2009	32%		90.1-2004
Air Force	BRAC - Dining Facility	WRIGHT PATTERSON AFB Fairborn, OH	2008	39%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
Air Force	SATELLITE PHARMACY	WRIGHT PATTERSON AFB Fairborn, OH	2012	30%		90.1-2007
Air Force	Joint Services Lodging Facility Phase 2	Youngstown, Vienna, OH	2009	30%		90.1-2004
Air Force	Supply Warehouse	ZANESVILLE, OH	2010	32%		90.1-2004
DECA	New Commissary	Saratoga Springs, NY	2007	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Fort Bliss, TX	2007	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Keesler AFB, MS	2007	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Ansbach, GE	2008	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Spangdahlem, GE	2008	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	K-16, Korea	2008	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Fort Campbell, KY	2009	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Fort Carson, CO	2009	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Chinhae, Korea	2009	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Portsmouth NNSY, VA	2009	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Annapolis NSA, MD	2010	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	New London NSB, CT	2010	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Mitchel Field, NY	2010	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Coraopolis, PA	2010	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	U.S. Southern Command	2010	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Gunter Annex, Maxwell AFB, AL	2011	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Fort Polk, LA	2011	Unknown - 30% goal	Yes	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
DECA	New Commissary	Fort Rucker, AL	2011	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Fort Belvoir, VA	2011	Unknown - 30% goal	Yes	90.1-2004
DECA	New Commissary	Jacksonville, FL	2012	Unknown - 30% goal	Yes	90.1-2004
DIA	Joint Use Intel Analysis Facility	Rivanna Station, Charlottesville, VA	2008	33%	N/A	90.1-2004
DIA	National Center for Medical Intelligence - Addition	FT Detrick, Frederick, MD	2008	33%	N/A	90.1-2004
DIA	Military Department Intelligence Activities	MCAS, Quantico, VA	2008	33%	N/A	90.1-2004
DIA	Intelligence Community Campus, Bethesda	Bethesda, MD	2011	33%	N/A	90.1-2004
DIA	Missile and Space Intelligence Command EOE Operations area	Redstone, Arsenal, Huntsville, AL	2011	33%	N/A	90.1-2004
DIA	Convert Warehouses at K16 Air Base	Afghanistan	2011	33%	N/A	90.1-2004
DIA	Construct new DIA HQ Parking Garage	Washington, DC	2012	33%	N/A	90.1-2004
DLA	Replace Public Safety Facility	Columbus OH	2011	28%	Yes	90.1-2004
DLA	AT Enhancements - New Entrance	Columbus OH	2011	36%	N/A	90.1-2004
DLA	Community Center	Columbus OH	2010	32%	N/A	90.1-2004
DLA	Child Development Center Expansion	Columbus OH	2009	21%	Yes	90.1-2004
DLA	Physical Fitness Center	New Cumberland, PA	2007	0%	N/A	90.1-2004
DLA	Purchase Relocatable (Admin	New Cumberland, PA	2007	0%		90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
	Space)					
DLA	Family Housing	New Cumberland, PA	2009	0%		90.1-2004
DLA	Family Housing	New Cumberland, PA	2009	0%		90.1-2004
DLA	Family Housing	New Cumberland, PA	2009	0%		90.1-2004
DLA	Family Housing	New Cumberland, PA	2009	0%		90.1-2004
DLA	Central Heat Plant	New Cumberland, PA	2009	0%		90.1-2004
DLA	GPW - BRAC Warehouse	New Cumberland, PA	2009	0%		90.1-2004
DLA	GPW - BRAC Warehouse	New Cumberland, PA	2009	0%		90.1-2004
DLA	Recycling Center	New Cumberland, PA	2009	0%		90.1-2004
DLA	HQ building	New Cumberland, PA	2010	40%	Yes	90.1-2004
DLA	General purpose warehouse	New Cumberland, PA	2011	40%	Yes	90.1-2004
DLA	ACP	New Cumberland, PA	2011	40%	Yes	90.1-2004
DLA	Waste water treatment plant	New Cumberland, PA	2011	40%	Yes	90.1-2004
DLA	Reservoir	New Cumberland, PA	2011	N/A	Yes	90.1-2004
DLA	Communications Building	New Cumberland, PA	2011	40%	Yes	90.1-2004
DLA	General Purpose Warehouse	Tracy, CA	2007	Unknown - 30% goal	Yes	90.1-2004
DLA	New Truck Entrance, Truck Control Facility	Tracy, CA	2008	30%	Yes	90.1-2004
DLA	Child Development Center	Tracy, CA	2010	34%	Yes	90.1-2004
NSA	Utah Data Center	Lehi, UT	2011	30%		90.1-2004
NSA	NSAColorado Mountainview	Aurora, CO	2011	30%		90.1-2004
WHS	Pentagon Emergency Response Center	Arlington, VA	2009	22%	Yes	90.1-2004

Component	Project Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1, will design achieve max life-cycle cost-effective level of energy efficiency?	Relevant standard based on start of project
WHS	Pentagon Athletic Center Phase II	Arlington, VA	2009	N/A	Yes	90.1-2004
WHS	Secure Access Lane	Arlington, VA	2011	>30%	N/A	90.1-2004
WHS	MEF/COR8 Screening Facilities	Arlington, VA	2012	>30%	N/A	90.1-2004

APPENDIX J

MILITARY CONSTRUCTION RENEWABLE ENERGY INITIATIVES

Installation Name	Project Description	Efficiency Standard		Roof		Sustainability Standard	
		Standard	Performance	Roof Attribute	Renewable Energy Technology Type	Standard	Performance
Fort Drum	Barracks	ASHRAE 90.1 2004	>30%			LEED	Silver
Fort Drum	Indoor Range	ASHRAE 90.1 2004	>30%	Solar PV		LEED	Silver
Fort Drum	TASC	ASHRAE 90.1 2004	>30%	Solar PV		LEED	Silver
Fort Drum	Barracks	ASHRAE 90.1 2004	>30%	Solar PV		LEED	Silver
Fort Drum	20th ASOS	ASHRAE 90.1 2004	>30%	Solar PV		LEED	Silver
Fort Drum	ORTC	ASHRAE 90.1 2004	>30%	Solar PV		LEED	Silver
Fort Jackson	AIT Phase 2 BCOF	ASHRAE 90.1 2007	>30%	Solar Thermal		LEED	Silver
Presidio of Monterey	1 MW Solar Array				Solar PV		
Hunter Army Airfield	Construct CAB BLST Facility	ASHRAE 90.1 2007	>30%				
Hunter Army Airfield	Construct ASAP facility	ASHRAE 90.1 2007	>30%				
Hunter Army Airfield	Construct Engagement skills trainer	ASHRAE 90.1 2007	>30%				
Hunter Army Airfield	Construct AFS BLST	ASHRAE 90.1 2007	>30%				
Fort Stewart	Construct 1st and 2nd HBCT BLST facility	ASHRAE 90.1 2007	>30%				
Fort Stewart	Construct ASAP facility	ASHRAE 90.1 2007	>30%				
Fort Stewart	Construct ACS bldg	ASHRAE 90.1 2007	>30%				
Fort Stewart	Renovate Bldg 443	ASHRAE 90.1 2007	>30%				
Fort Stewart	Renovate Mower Processing Ctr	ASHRAE 90.1 2007	>30%				
Fort Stewart	Renovate DFAC	ASHRAE 90.1 2007	>30%				
Fort Stewart	Construct RFI/ACU Fielding Facility	ASHRAE 90.1 2007	>30%				
Fort Stewart	Construct 4th BLST	ASHRAE	>30%				

Installation Name	Project Description	Efficiency Standard		Roof		Sustainability Standard	
		Standard	Performance	Roof Attribute	Renewable Energy Technology Type	Standard	Performance
	facility	90.1 2007					
88th RSC	St Joseph MN ARC	ASHRAE 189.1	>30%			LEED	Silver
81st RSC	Orangeburg SC ARC / Land	ASHRAE 189.1	>30%		Solar PV	LEED	Silver
81st RSC	Greensboro NC ARC / Land	ASHRAE 189.1	>30%			LEED	Silver
88th RSC	Rockford IL ARC / Land	ASHRAE 189.1	>30%	Solar PV		LEED	Silver
99th RSC	Schenectady, NY ARC	ASHRAE 189.1	>30%			LEED	Silver
88th RSC	Fort Collins CO ARC	ASHRAE 189.1	>30%			LEED	Silver
88th RSC	Fort Ben Harrison ARC	ASHRAE 189.1	>30%		Solar PV	LEED	Silver
88th RSC	Homewood IL Add/Alt	ASHRAE 189.1	>30%		Solar PV	LEED	Silver
88th RSC	St Charles/Weldon Springs, MO ARC	ASHRAE 189.1	>30%			LEED	Silver
Fort McCoy	Fort McCoy Container Loading Facility	ASHRAE 189.1	>30%			LEED	Silver
Fort McCoy	NCOA PhIII - Billiting	ASHRAE 189.1	>30%			LEED	Silver
Arizona Army National Guard	FMR ARMORY - SOLAR ARRAY	ASHRAE 90.1 2010	>10%	Solar PV		LEED	Gold
Colorado Army National Guard	Costruction of new facility.	ASHRAE 90.1 2004	Met			LEED	Met
Colorado Army National Guard	Costruction of new facility.	ASHRAE 90.1 2007	Met			LEED	Silver
Hawaii Army National Guard	Brigade Readiness Center	ASHRAE 90.1 2004	>30%	Cool		LEED	Silver
Idaho Army National Guard	ORTC Phase 1 - Barracks & Dining Facility	ASHRAE 90.1 2010	>30%	Solar PV			
Idaho Army National Guard	TUAS	ASHRAE 90.1 2010	>30%		Solar PV		
Illinois Army National Guard	59,410 SF Readiness Center for the 404th MEB. Includes a geothermal system						
Kansas Army National Guard	Ground Source Heat Pump Installation	ASHRAE 90.1 2007	>30%				
Maine Army National Guard	Brunswick AFRC	ASHRAE 90.1 2004	>30%	Green		LEED	Silver

Installation Name	Project Description	Efficiency Standard		Roof		Sustainability Standard	
		Standard	Performance	Roof Attribute	Renewable Energy Technology Type	Standard	Performance
Maine Army National Guard	Bangor Aviation Building	ASHRAE 90.1 2004	>30%			LEED	Silver
Minnesota Army National Guard	Construct FMS	ASHRAE 90.1 2004	>30%	Solar PV		LEED	Silver
Minnesota Army National Guard	Construct FMS	ASHRAE 90.1 2004	>30%	Solar Thermal		LEED	Silver
Missouri Army National Guard	solar wall	ASHRAE 90.1 2007	>30%			LEED	Silver
NAS Jacksonville FL	BAMS Trainer	ASHRAE 90.1 2007					
NAS Jacksonville FL	P-8A Maintenance Training Facility	ASHRAE 90.1 2007					
NSA Mechanicsburg PA	NOSC Pittsburgh	ASHRAE 90.1 2004					
NSS Norfolk Naval Shipyard VA	Controlled Industrial Facility	ASHRAE 90.1 2004					
Camp Lemonnier Djibouti	General Warehouse	ASHRAE 90.1 2004					
NSA Andersen	Combat Comm Transmission Facility	ASHRAE 90.1 2007	>30%			LEED	Silver
NSA Andersen	Conventional Munition Maintenance Facility	ASHRAE 90.1 2007	>30%			LEED	Silver
NSA Andersen	Air Freight Terminal	ASHRAE 90.1 2007	>30%			LEED	Silver
NSA Andersen	Red Horse Cantonement Operations Facility	ASHRAE 90.1 2007	>30%			LEED	Silver
NAS Whiting Field Milton FL	Applied Instruction Facility, EOD Course	ASHRAE 90.1 2004					
NAVSTA ROTA SP	Air Traffic Control Tower	ASHRAE 90.1 2010					
NSA Bahrain	Operations and Support Facilities	ASHRAE 90.1 2004					
NSA Bahrain	EOD Operation Building	ASHRAE 90.1 2004					

Installation Name	Project Description	Efficiency Standard		Roof		Sustainability Standard	
		Standard	Performance	Roof Attribute	Renewable Energy Technology Type	Standard	Performance
NSA Bahrain	BEQ	ASHRAE 90.1 2004					
NSA Bahrain	Recreation Center	ASHRAE 90.1 2004					
NAVBASE Coronado San Diego CA	Rotary Hangar	ASHRAE 90.1 2004					
NAVBASE Kitsap Bremerton WA	EHW Security Force Facility	ASHRAE 90.1 2007				LEED	Silver
NSA South Potomac Dahlgren VA	Agile Chemical Facility, Phase 2	ASHRAE 90.1 2004					
Anderson AFB, Guam	Combat Communications Transmission System Facility	ASHRAE 90.1 2007	30%	Cool, Solar PV		LEED	Silver
Anderson AFB, Guam	Combat Communications Maintenance Facility	ASHRAE 90.1 2007	32%	Cool, Solar PV		LEED	Silver
Fairchild AFB, WA	Fitness Center	ASHRAE 90.1 2007	42%	Cool, Solar Thermal		LEED	Gold
Anderson AFB, Guam	Guam Strike Conventional Munitions Maintenance Facility	ASHRAE 90.1 2007	20%	TBD		LEED	Silver
Fort Sam Houston, San Antonio, TX	BRAC-Joint Base San Antonio Headquarters Facility Brac-502 ABW BOS Administration Facility	ASHRAE 90.1 2007	21%	Cool, Solar Thermal		LEED	Silver
Nellis AFB, NV	Add Alter F-35a Munitions Maint Facilities	ASHRAE 90.1 2007	30%	Solar PV		LEED	None
Grandforks AFB, ND	Consolidated Security Forces Facility	ASHRAE 90.1 2007	37%	Cool, Solar Thermal		LEED	Silver
Holloman AFB, NM	Const Medical Facility	ASHRAE 90.1 2007	30%	Cool, Solar Thermal		LEED	Silver
Hurlburt AFB, FL	Flight Test Operations Facility	ASHRAE 90.1 2007	30%	Cool, Solar PV		LEED	Certified

Installation Name	Project Description	Efficiency Standard		Roof		Sustainability Standard	
		Standard	Performance	Roof Attribute	Renewable Energy Technology Type	Standard	Performance
Lackland AFB, TX	Recruit/Family Inprocessing & Information Center	ASHRAE 90.1 2007	30%	Cool, Solar Thermal		LEED	Gold
Peterson AFB, CO	Construct Child Development Center	ASHRAE 90.1 2007	9%	Cool, Solar PV		LEED	Gold
Luke AFB, AZ	F-35 ADAL AMU	ASHRAE 90.1 2007	42%	Cool, Solar PV		LEED	Gold
Luke AFB, AZ	F-35 Squadron Ops Facility	ASHRAE 90.1 2007	44%	Cool, Solar PV		LEED	Gold
McConnell AFB	Air Traffic Control Tower	ASHRAE 90.1 2007	30%	Cool, Solar Thermal		LEED	Silver
Nellis AFB, NV	Add Alter F-35A Fuel Cell Maintenance Hangar	ASHRAE 90.1 2007	30%	Cool, Solar PV		LEED	None
Seymour-Johnson AFB, NC	Radar Approach Control Complex, Ph 1	ASHRAE 90.1 2007	30%	Cool, Solar PV		LEED	Silver
Scott AFB, IL	Aeromedical Evacuation Facility	ASHRAE 90.1 2007	38%	Cool, Solar Thermal		LEED	Gold
Hurlburt AFB, FL	SOF Simulator Facility	ASHRAE 90.1 2007	28%	Cool, Solar Thermal		LEED	Silver
Langley AFB, VA	F-22 Add/Alter Hangar Bay LO/CR Facility - TFI	ASHRAE 90.1 2007	32%	Cool, Solar Thermal		LEED	Gold
Defense Supply Center Columbus	Replace Public Safety Facility	ASHRAE 90.1 2007	>25%			LEED	Silver
Defense Supply Center Columbus	AT Enhancements - New Entrance	ASHRAE 90.1 2007	>30%			LEED	Silver
Susquehanna	New HQ building	ASHRAE 90.1 2007	>40%	Solar PV		LEED	Silver
Susquehanna	Solar Thermal Wall - EDC				Solar Thermal		
Fort Meade Campus	North Campus Utility plant			Solar PV			
Fort Meade Campus	South Campus Utility Plant			Solar PV			
NSA @ ADF-Colorado	Denver SOC			Green			

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APPENDIX K

UTILITY PRIVATIZATION REPORT

Introduction

Reliable energy supplies and utilities are essential to support military missions and the quality of life of our military personnel and their families. Since enactment of the utilities privatization authorities in 1997, the Department has analyzed most of its inventory of utility systems and conveyed systems where it was economically efficient and where it did not undermine national security. Only 601 of its 2,609 core systems remain to be studied. Privatized systems include electric, water, wastewater, and natural gas.

The Department of Defense (DoD) welcomes this opportunity to describe its utilities privatization (UP) efforts as requested by the House Committee on Armed Services in its report (H.R. 112-78) to accompany H.R. 1540, the National Defense Authorization Act for Fiscal Year 2012, Public Law (P.L.) 112-81.

- Section 1 of this report provides an update of the report elements included in section 2823(f) of the National Defense Authorization Act for Fiscal Year 2006 (P.L. 109-163).
- Section 2 provides an assessment of whether it would be beneficial to leverage utilities privatization as part of agency initiatives to increase use of renewable energy and to conserve water.

Section 1 – Update

Historically, installations have been unable to upgrade or maintain utility systems due to inadequate funding and competing management priorities. To address this situation, Congress authorized the Service Secretaries, under 10 U.S.C. § 2688, to analyze and determine the feasibility of conveying a utility system, or part of a system, to a municipal, private, regional, district, or cooperative utility company or other entity. This initiative affords the Department the opportunity to harness private sector capabilities and capital to improve the quality of the utility distribution service at DoD installations.

The National Defense Authorization Act for Fiscal Year 2006, Public Law 109-163, Section 2823(f), (119 Stat. 3517) requested that the Secretary of Defense submit a report describing the use of 10 U.S.C. § 2688 authority to convey DoD utility systems. (An excerpt of the language requesting the report is at Appendix A.) House Report 112-78 to accompany H.R. 1540, the National Defense Authorization Act for Fiscal Year 2012, P.L. 112-81, requested an update of the 2006 report.

For each of the eight (8) reporting items requested by P. L. 109-163, the Department has provided the statutory wording in bold italics and prepared a written update to the 2006 report below.

1. Economic Analysis Methodology and Guidance

“A discussion of the methodology by which a military department conducts the economic analyses of proposed utility system conveyances under section 2688 of title 10, United States Code, including the economic analysis referred to in subsection (a)(2) of such section, and any guidance issued by the Department of Defense related to conducting such economic analyses.”

Since the inception of the UP Program in 1997, the Department has been monitoring the economic analyses of proposed conveyances and issuing guidance as necessary to support and guide the program. Issued guidance since the National Defense Authorization Act for Fiscal Year 2006 includes:

- In March 2006, the Under Secretary of Defense for Acquisition, Technology and Logistics (USD AT&L) issued Supplemental Guidance for the UP Program. The National Defense Authorization Act for Fiscal Year 2006 had added several provisions to 10 U.S.C. § 2688 to facilitate the Department's ongoing efforts to complete evaluations on all remaining utility systems. In response, the Department of Defense provided guidance to assist the Military Departments with implementing these changes in the UP program.
 - Directed the Military Departments to include an explanation within the economic analysis as to how margin of error considerations are addressed in developing independent government cost estimate and carried forward in the price analysis and cost realism report.
 - Allowed the Military Departments to obtain fair market value through means other than cash payments or rate credits, if proven to be in the best interest of the government.
 - Re-delegated to the Secretaries of the Military Departments and the Director of the Defense Logistics Agency the authority to determine the cost effectiveness of a contract term in excess of 10 years, but not to exceed 50 years, pursuant to 10 U.S.C. § 2688(d)(2). It further instructed the methodology for analyzing the longer term contract without requiring separate proposals from the Offerors.
 - Placed a temporary limitation on conveyance authority for systems privatized during each of fiscal years 2006 and 2007, the number of utility systems under 10 U.S.C. § 2688 to not exceed 25 percent of the total number of utility systems determined to be eligible for privatization under this authority as of January 6, 2006.
- In September 2010, the USD AT&L issued Supplemental Guidance for the Utilities Privatization Program. The National Defense Authorization Act for Fiscal Year 2010 had changed several provisions to 10 U.S.C. § 2688. In response, the Department of Defense provided guidance to assist the Services with implementing these changes in the UP program.
 - Required that Military Departments satisfy the new requirements in 10 U.S.C. § 2688 (a)(2)(ii), which stated that the economic analysis must demonstrate that the

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- conveyance of the utility system would reduce the long-term cost to the United States by ten percent of the long-term cost for provision of the utility services.
- Imposed a five-year waiting period applicable to subsequent efforts to privatize a utility system, or a part of a system, under 10 U.S.C. § 2688, or to convert the operation of the system, or a part of the system, from government employees to a private contractor under 10 U.S.C. § 2461.
 - Restricted Public-Private competitions under 10 U.S.C. § 2688 requiring they not be pursued while a public-private competition under 10 U.S.C. § 2461 is being conducted for that utility system.
- In March 2011, the USD AT&L issued a Class Deviation from FAR Part 31 for qualified contracts when awarded in conjunction with the conveyance of a utility system under 10 U.S.C. § 2688. The applicability of this deviation extended to all qualified contracts awarded as of August 31, 2010. The class deviation remains in effect until it is incorporated into the DFARS or is otherwise rescinded. It replaced and updated a previous deviation granted in the Contract Pricing Guide in 2004.
 - The National Defense Authorization Act for Fiscal Year 2012 changed several provisions to 10 U.S.C. § 2688 to facilitate the Department's ongoing efforts to complete evaluations on all remaining utility systems. The Department of Defense is currently drafting guidance to assist the Military Departments with implementing these changes in the UP program.
 - Removed the restriction that a Secretary of a Military Department must not enter into a contract to convey a utility system, or part of a system, until the Secretary submits an economic analysis to the congressional defense committee that demonstrates that the long-term economic benefits exceeds the long-term costs to the United States; that the conveyance will reduce the long-term costs to the United States by ten percent; and that the economic analysis incorporate margins of error in the estimates.
 - Removed the requirement to wait 21 days after submission of the economic analysis to the congressional defense committee prior to conveying a system, or part of a system.
 - Removed the five-year waiting period applicable to subsequent efforts to privatize a utility system, or a part of a system, under 10 U.S.C. § 2688, or to convert the operation of the system, or a part of the system, from government employees to a private contractor under 10 U.S.C. § 2461.
 - Removed the requirement that the economic analysis submitted to the congressional defense committee include an explanation of the need for a contract term longer than ten years and the comparison of costs between a ten year contract and the longer-term contract.
 - Removed the requirement that the Secretary of the Military Departments report to the congressional defense committees on a quarterly basis on conveyances made under 10 U.S.C. § 2688.
 - Removed the requirement that the Secretary of the Military Department shall consider any such contribution for assistance for construction, repair, or

replacement of utility systems in the economic analysis required under 10 U.S.C. § 2688 (a)(2).

The changes in requirements to 10 U.S.C. § 2688 as a result of the National Defense Authorization Act for Fiscal Year 2012 do not relieve the Military Departments from conducting sound economic analyses to support decisions regarding conveyance of utility systems under the authority of 10 U.S.C. § 2688. In addition to the guidance issued by the USD AT&L for UP, the Military Departments must conduct their analyses in accordance with OMB Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs; DoDI 7041.3, Economic Analysis for Decision-making; DoDI 4170.11, Installation Energy Management; as well as individual Military Department guidance, instructions and policy.

2. Reliability of Economic Analyses

"A list of the steps taken to ensure the reliability of completed economic analyses, including post-conveyance reviews of actual costs and savings to the United States versus the costs and savings anticipated in the economic analyses."

To assist the Military Departments in conducting the required economic analyses, the Deputy Under Secretary of Defense for Installations and Environment (DUSD (I&E)) developed the Utility Privatization Economic Analysis Support Tool (UPEAST). UPEAST was approved for use in 2002 as part of the source selection process to determine whether it was economical to privatize a utility system. The DUSD (I&E) issued guidance directing DoD Components to use the UPEAST model, or a comparable cost model, to conduct the required life cycle cost analysis. While the Navy, Army, and Defense Logistics Agency used UPEAST, the Air Force developed a similar model known as the Certified Economic Analysis (CEA) model. Due to changes in technology and the cost to convert the outdated operating system, UPEAST is no longer maintained by OSD. The Air Force continues to update and utilize its CEA model while the Army and Navy are developing their own economic models which are pending approval of OSD.

The USD AT&L provides the Military Departments guidance, assigns responsibilities, and prescribes procedures for DoD installation energy management, including UP, in DoDI 4170.11, which was revised and updated by USD AT&L in December 2009. DoDI 4170.11 provides direction in conducting Margin of Error Analysis and the elements of government cost estimates, contractor cost estimates, cost realism and risk assessment.

The DoDI 4170.11 also directs Military Departments to conduct a post-conveyance review of each privatized system 2 to 3 years after award or 1 year after the first price re-determination, whichever is later. The post-conveyance review is to include, at a minimum, joint detailed inventory, updated list of requirements reflecting changes, updated list of transition requirements, updated list of deficiencies, contract cost changes due to updated inventory, contract cost changes due to new connections or disconnects, and description of inventory changes due to connections and disconnects. Costs are to be summed over the period from award to analysis and compared to projections. Record of the original Government estimate and

contract cost shall be maintained until the analysis is performed and all analysis results are to be maintained until analysis of all conveyances is complete.

DUSD (I&E) has now initiated a formal post-award review to evaluate the extent to which actual costs correspond to those in the economic analyses performed prior to award. The study will evaluate privatized systems at six representative installations across the three military services. This review will provide a summative evaluation of the costs those installations and systems. It will also provide an analytical framework for evaluating the rest of the privatized inventory.

3. Cost and Savings of Conveyances

"A review of the costs and savings to the United States resulting from each utility system conveyance carried out under such section."

Military installations in the United States, its Territories, and in foreign countries are served by 2,609 core utility systems. These core systems include electric, water, wastewater, and natural gas. Table 1 below provides a summary of the status of the privatization of core systems.

Table 1 – Core Utility Systems

Location	Privatized ²	Exempted ³	Owned by Others ⁴	Active ⁵	Total
United States	321	675	67	596	1,659
U.S. Territories	3	16	6	5	30
Overseas	236	0	684	0	920
Total	560	691	757	601	2,609

* Data current as of December 2011

Since UP was authorized in 1997, approximately 21 percent of DoD systems are privatized, 26 percent are exempted, and 30 percent are already owned by a private entity. The remaining 23 percent, or 601 core systems, remain eligible for privatization or are pending completion of evaluation.

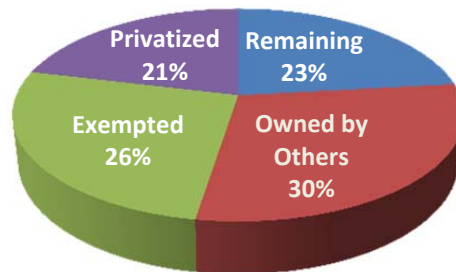
² "Privatized" includes systems privatized under the authority of 10 U.S.C. §2688 as well as those privatized under separate authority including 10 U.S.C. §2671.

³ "Exempted" includes systems exempted from privatization for security or economic reasons.

⁴ "Owned by Others" includes systems that provide core utility services on an installation but were built and maintained by an entity other than the U.S. Government. This category also includes systems that are "abandoned in place" by the DoD and subsequently rebuilt and maintained by an entity other than the U.S. Government.

⁵ "Active" includes all systems that DoD owns but has neither privatized nor exempted.

Figure 1 – Status of UP Systems



To assist the Services in executing their UP program, the DUSD(I&E) monitors progress, maintains an inventory and status of utility systems, and provides updates to program guidance. All legislative and policy documents for the UP program can be found on the DUSD(I&E) website at: <http://www.acq.osd.mil/ie/energy/utilities/utilities.shtml>.

Privatization of non-core military functions, such as ownership and operation of utility systems, is a method to gain long-term cost savings and to capture the benefits of private sector financing and technical expertise. UP provides alternative financing for system infrastructure improvements and a utility provider capable of operating the systems in a technically effective and efficient manner. Because financing costs are amortized over time, UP provides minimal short-term savings. However, the long-term pay-off is a better way of doing business using the private sector's talent and technology to improve our utility infrastructure. Installations realize a potential savings over the long term through modernized and more reliable systems. Since 1997, the DoD has entered into contracts to privatize core utility systems which will avoid approximately \$5 billion in recapitalizing and operating the systems to industry standards.

4. Fair Market Value

"A discussion of the feasibility of obtaining consideration equal to the fair market value of a conveyed utility system, as authorized in subsection (c) of such section, and any guidance issued by the Department of Defense related to implementing that requirement, and the effect of that requirement and guidance on the costs and savings to the United States resulting from procuring by contract the utility services provided by the utility system."

Information provided in the March 2006 response to P. L. 109-163 remains relevant and no update is applicable.

5. Effects of Permanent Conveyance

“A discussion of the effects that permanent conveyance of ownership in a utility system may have the ability of the Secretary of a military department to renegotiate contracts for utility services provided by the utility system or to procure such services from another source.”

At this point in the UP program, we do not have sufficient information to draw any meaningful conclusions about the effects of permanently conveying ownership of systems.

6. Reversion

“A comparison of the value of contracts to permanently convey ownership in a utility system versus contracts that include reversion of the utility system to Government ownership at the end of a specified contractual period with regards to contract terms, short- and long-term costs to the Government, system condition at the end of the contract, liability and costs associated with termination before the end of a contract, and available courses of action to address problems and other issues raised during and after the contractual period.”

Information provided in the March 2006 response to P. L. 109-163 remains relevant and no update is applicable.

7. Program Oversight

“A discussion of the efforts and direction within the Department of Defense to oversee the implementation and use of the utility system conveyance authority under this section and to ensure the adequacy of utilities services for a military installation after conveyance of a utility system.”

The 2006 report included extensive information on DOD efforts to provide oversight. Items 1-3 above discuss the implementation of legislation since the 2006 report and the initiation of a post-conveyance review of the UP program.

8. Impact to Base Operating Budgets

“A discussion of the effect of utility system conveyances on the operating budgets of military installations at which the conveyances were made.”

As stated in item 2, DUSD (I&E) has initiated a formal post-conveyance review to evaluate the extent to which actual costs correspond to those in the economic analyses performed prior to award. This study will discuss the impact of actual contract costs on military installation operations.

Section 2 – Renewable Energy, Water Conservation, and UP

Renewable Energy – and UP

Privatization has the potential to leverage the use of renewable energy on military installations by combining greater system reliability, emerging technology, and advanced construction timeframes. Efficient use of utility scale generated electricity, regardless of its fuel source, is dependent on the various components that comprise the generation, transmission, and distribution systems. Energy is lost in the form of heat as it flows through the transformers, regulators, lines, conductors, and meters that make up the distribution system. This is referred to as system loss. By replacing or upgrading equipment, the amount of resistance can be reduced thereby reducing system loss.⁶

Because renewable energy is generally more expensive than nonrenewable energy,⁷ the cost of system loss is greater when electricity is generated, and subsequently lost, with renewable sources such as wind and solar. Without improvements to the distribution systems, if they are beyond their useful life or are utilized beyond their rated capacity, the economic value of system loss will increase. When renewable systems, and particularly solar systems, are located on the installation, the system loss can be significantly reduced due to the shorter transmission distances. UP provides the upfront capital required to replace or upgrade equipment while ensuring a well-qualified contractor performs the operations and maintenance needed to keep the system functioning in accordance with industry standards.

Privatizing utilities also provides DoD with alternative financing for improvements and modernization of its distribution systems required to exploit distributed generation, meet the standards of IEEE 1547 (Institute of Electrical and Electronics Engineers) and advance the development of microgrids on installations. In addition, where installations have already installed and own distributed generation assets, 10 U.S.C. §2688 allows for the conveyance of those assets.

The U.S. Government Accountability Office (GAO) has cited several advantages to the use of alternative financing for DoD renewable energy projects, including the use of contractors with expertise to operate and maintain renewable energy projects and the ability to enter into cost-effective financing methods. UP, while not cited by the GAO as a potential approach to addressing renewable energy projects, has the potential to assist DoD in meeting some of its challenges in exploiting renewable energy.

⁶ T. Hoff and D.S. Shugar, "The Value of Grid-Support Photovoltaics in Reducing Distribution System Losses," IEEE Transaction on Energy Conversion, Vol. 10, No. 3, September 1995, pp. 569-576

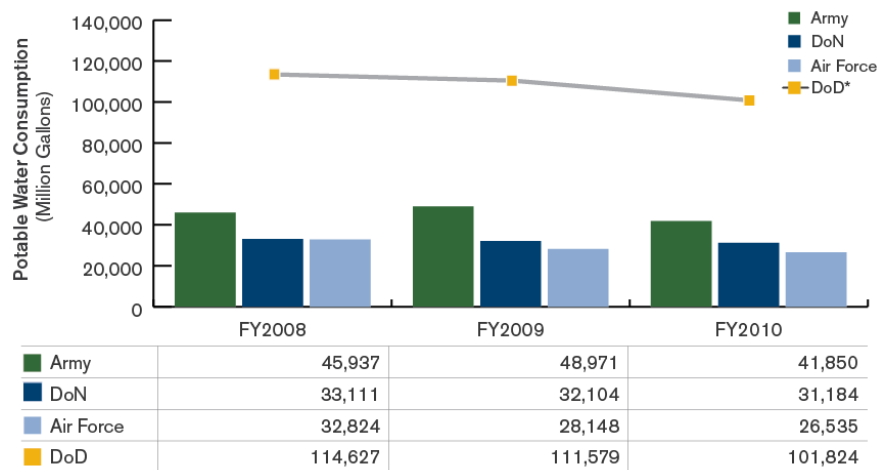
⁷ Department of Energy, Energy Information Administration, *Annual Energy Outlook 2011*, DOE/EIA-0383, (Washington, DC, April 11, 2011)

Water Conservation – and UP

Privatization provides installations with an additional option to address supply side water conservation. Under a privatized scenario, installations have the ability to modernize and repair aging water storage and distribution systems while amortizing the costs over the life of the system thereby lowering upfront government funding requirements when compared to continued government ownership. Reductions in commodity costs can be achieved while ensuring the system continues to deliver with minimal loss through routine preventive maintenance.

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, October 5, 2009, established a goal of reducing consumption intensity by two percent per year, or 16 percent overall, by 2015 relative to a 2007 baseline. In FY2010, DoD facilities consumed over 101,000 million gallons of potable water (Figure 1), with the Military Departments accounting for 98 percent of total DoD consumption. Total DoD consumption decreased 8.7 percent from FY2009 consumption levels, which was driven primarily by a significant decrease in Army potable water consumption in FY2010.

Figure 2 – DoD Potable Water Consumption Trend FY2008-2010*



* DoD Components are accounted for in DoD trend line

In an effort to decrease water consumption the Army initiated a number of water-saving initiatives related to utilities privatization, including the replacement of a 20 year-old water distribution system at Fort Rucker and the development of a non-potable landscape irrigation distribution system to reduce demand on the potable water supply at Fort Gordon.

Leak detection and repair programs, in conjunction with water audits and the installation of meters and low-flow water efficient fixtures, provide options for installations to address both the supply and demand side of water conservation. Water loss from distribution systems can be significant and can occur for an extended period of time before it is detected. In a 2003 study by

the American Water Works Association, water distribution systems measured losses ranging from 15 to 35 percent.⁸ DoD sites can avoid similar losses if early detection and repair processes are in place.

⁸ U.S. Environmental Protection Agency, *Control and Mitigation of Drinking Water Losses in Distribution Systems*, EPA 816-R-10-019, November 2010.

Conclusion

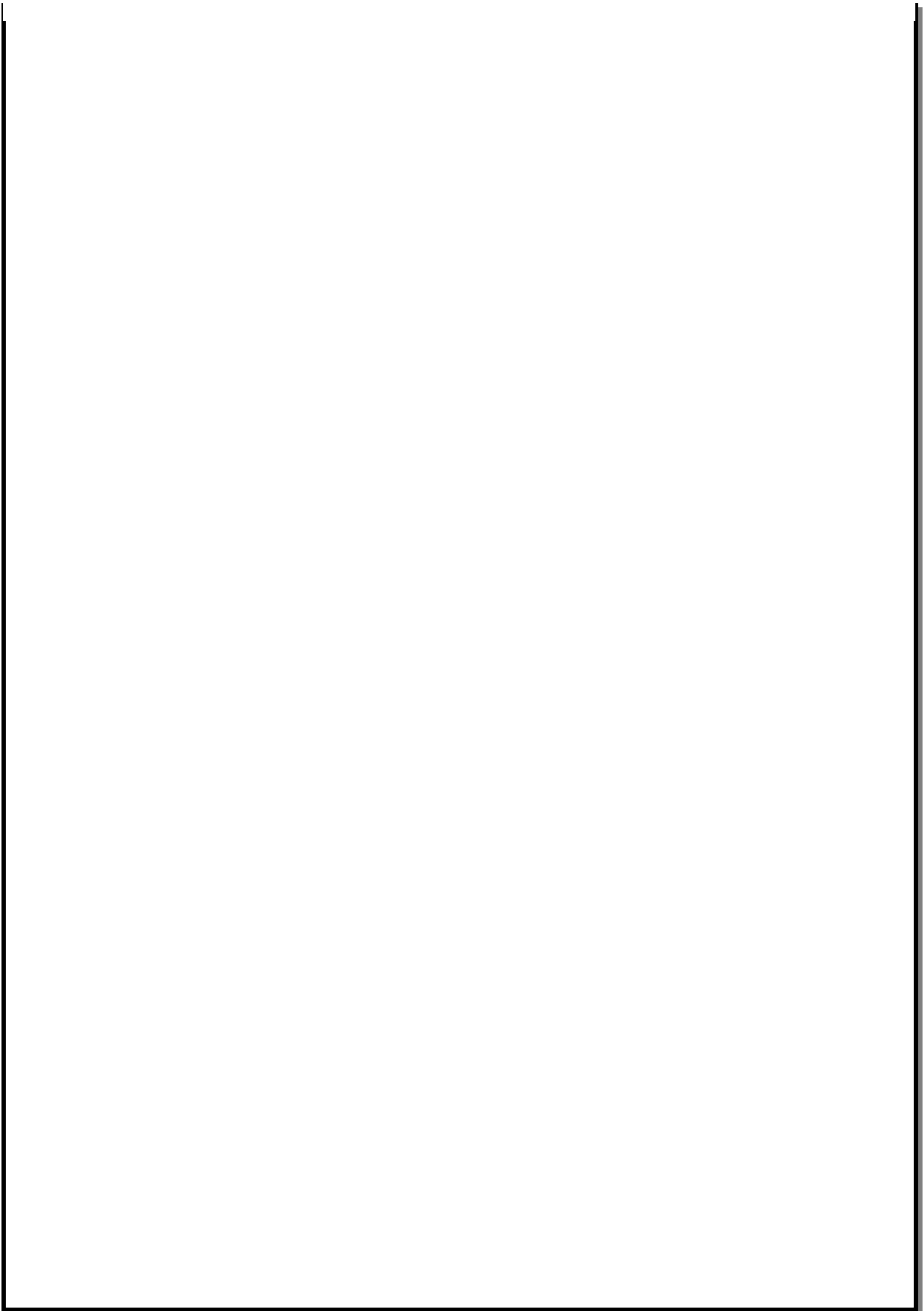
Utilities privatization is a valuable tool in providing improved services to our installations and will continue to serve as a viable option for the management of DoD assets. UP has improved energy security at our installations through higher system reliability, implementation of industry standards and best practices, and adoption of emerging technology with the advantage of amortized payments over a defined period.

Conversely, DoD-owned systems have historically experienced some order of disrepair due to competing budget priorities. Particularly in times of tightly constrained resources, the military services tend to defer utility system maintenance and repair in favor of other priorities. In many cases, utilities are fixed only when they fail. With its consistent must-pay funding, UP can offer a better way of doing business in that infrastructure is maintained and recapitalized at the end of its life cycle, thus significantly improving energy security and reliability.

Where technically feasible and cost effective, the Department will integrate its various infrastructure and energy programs to meet the goals of renewable energy and water conservation. This commitment to the disciplined distribution of resources for high-priority activities encourages collaboration among our stakeholders that continues the tradition of groundbreaking ideas generated by innovative minds in the private and public sectors.

Appendix A

Excerpt – Section 2823(f), P.L. 109-163



Appendix B

Key UP and Facilities Energy Terminology

- **Distributed generation** – consists of small-scale generating assets that are strategically sited at the individual building/facility where the power is needed. Power from distributed generation may be configured to energize a single facility or they may be configured to flow power into the distribution system to be consumed within a local area. Distributed generation technologies include micro-turbines driven by wind, photovoltaic systems, fuel cells, concentrating solar systems and small modular bio-power.
- **Enhanced Use Lease** – a method for funding construction or renovations on military property by allowing a private developer to lease underutilized property, with rent paid by the developer in the form of cash or in-kind services.
- **Energy Savings Performance Contract** – contract using an Energy Savings Company (ESCO) that uses private sector investment to provide the upfront capital to install or repair energy saving systems
- **Microgrids** – local power networks that use distributed energy resources and manage local energy supply and demand. Although microgrids would typically operate connected to a bulk power transmission and distribution system, they would have the ability to pull themselves off the grid and function in island mode when necessary to increase reliability for the local load.⁹
- **Utility Energy Service Contracts** – public utility sponsored programs that encourage energy-efficiency improvements by offering financial incentives (rebates), subsidies, or other support to their customers for installation of energy-efficient technologies.
- **Utility scale** – renewable projects that are large, higher voltage, centrally located generation facilities which produce power that is transmitted and distributed to many customers. In most cases, larger scale, off-grid, electrical generation systems are non-DoD owned and operated.

⁹ Z. Ye, R. Walling, N. Miller, P. Du, K. Nelson, “Facility Microgrids” prepared for the National Renewable Energy Laboratory, May 2005.

APPENDIX L

CONTACT INFORMATION

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APPENDIX M

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